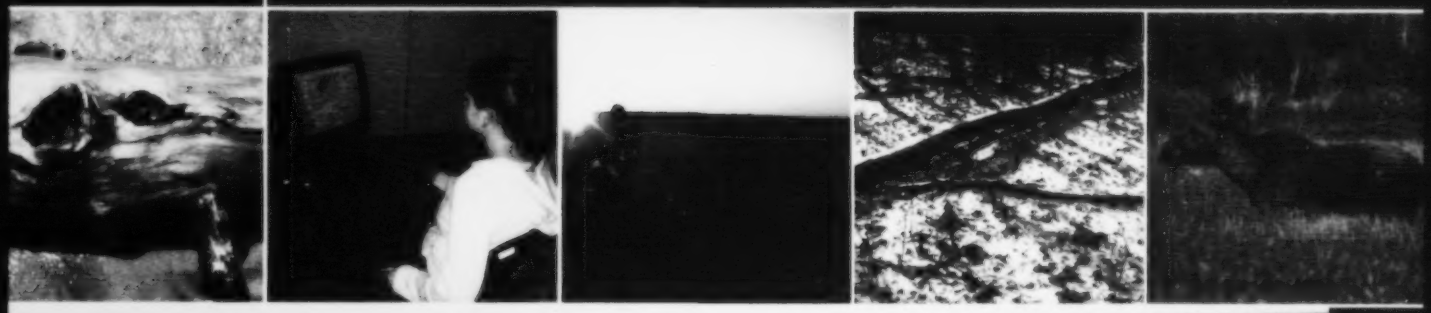
Ontario

Annual Report on Forest Management **2004/2005**



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Annual Report on Forest Management

For the year April 1, 2004 to March 31, 2005

Ontario

Minister of Natural Resources of the Province of Ontario

To his Honour
The Lieutenant-Governor of the Province of Ontario

May it please your Honour

The undersigned begs respectfully to present to your Honour the Annual Report on Forest Management for the fiscal year beginning April 1, 2004 and ending March 31, 2005.

David Ramsay
Minister

May, 2007

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Executive Summary

The original approval for timber management activities under the *Environmental Assessment(EA) Act* covered nine years from 1994 to 2003. A review of the implementation of the original EA concluded in June 2003, when the Minister of the Environment (MOE) issued a declaration order. The MOE declaration order extended and amended the 1994 Class EA approval and outlined conditions for forest management on Crown land in Ontario within the area of the undertaking (AOU). One of the conditions required the Ministry of Natural Resources (MNR) to continue to table an annual report on forest management in the provincial legislature.

This is the MNR's tenth annual report on forest management under an EA approval. This report follows a format which is consistent with the conditions of the 2003 Class EA approval for forest management on Crown lands in Ontario. It covers the fiscal year April 1, 2004 to March 31, 2005. This report is the first to utilize a revised format for information supplied in management unit annual reports. The use of this format allows for timely reporting of information, and this report catches up on a delay in reporting of information related to disturbance and harvest. Disturbance and harvest information is presented for both 2003-04 and 2004-05.

The forest management legislative and policy framework of the MNR has undergone significant improvements in the last decade. The *Crown Forest Sustainability Act* (CFSA), which came into effect in 1995, requires anyone operating in an Ontario Crown forest to ensure the long-term health of the forest so that the benefits from the province's forests are available to future generations.

Ontario's 107.6[1] million hectare area is comprised of about 88.3 million hectares of land and 19.3 million hectares of water. The AOU, where most forest management activities on Crown land occur, totals 43.8 million hectares of forest. Productive forest on Crown land in the AOU covers about 32.7 million hectares, with only 18.8 million hectares of this area eligible for forest management activities. Ontario also has 7.0 million hectares of productive forest land under private ownership, 14 percent of the province's inventoried productive forest land base. Private forests account for 13.5 percent of Ontario's growing stock, including approximately one-half of the volume of hard maple and "other hardwoods". The focus of this annual report is to provide information on the activities carried out on the eligible 18.8 million hectares of Crown forest in 2004-05.

As of April 1, 2004, the AOU was divided into 49 management units. A 50th management unit is comprised of all the pieces of Crown land in southern Ontario outside the AOU.

The CFSA requires that an approved Forest Management Plan (FMP) be in place for each management unit. A FMP describes the values of the forest in a management unit, as well as the harvesting, renewal, and other forest management activities that will occur. In June 2004, a revision of the Forest Management Planning Manual (FMPM) was regulated under the *Crown Forest Sustainability Act* and

[1] Based on the *Forest Resources of Ontario, 2000*

came into effect in September (2004). The biggest change from the 1996 to the 2004 FMPM is the change from 5 year planning periods to ten year planning periods. The change to a ten year plan reduces the overall planning effort required over the ten year plan period. In 2004-05, seven FMPs were approved for implementation.

The *Forest Information Manual* is one of four regulatory manuals required by the CFSA. This manual describes the requirements for exchanging information concerning the management of Crown forests between the forest industry and the MNR. Implementation of the *Forest Information Manual* continued during 2004-05. To facilitate information exchange between the MNR and the forest industry the Forest Information Portal (a web based data exchange system) was introduced in 2002. Improvements to the Portal were made to support the submission of information for the 2004-05 management unit annual reports from the forest industry to the MNR. The Forest Information Portal is now well established and commonly used; further development and improvement is expected to continue over the next few years.

The CFSA provides for two types of licences governing the use of forest resources in Ontario: Forest Resource Licences (FRLs) and Sustainable Forest Licences (SFLs). In 2004-05, there were a total of 4,509 licences in place in Ontario.

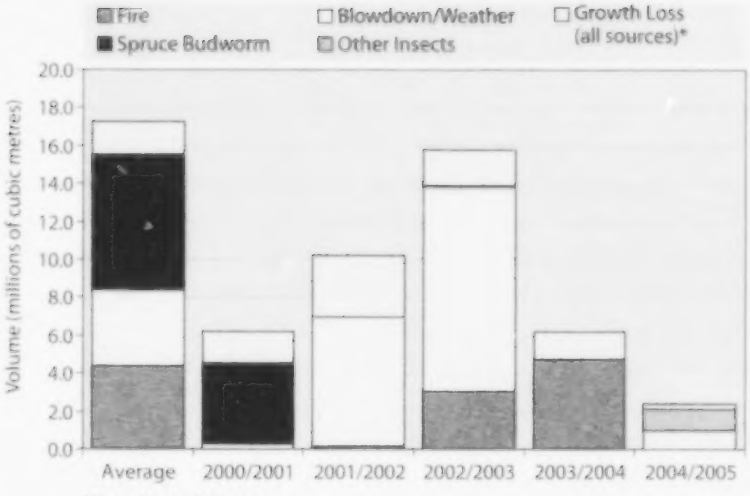
Forest management operations require a complex system of primary and secondary roads, the cost of which was borne largely by forest companies during 2004-05. A total of 383 kilometres of new primary and secondary roads were constructed in Ontario forests. Maintenance work was carried out on another 11,990 kilometres of roads.

In the past, figures reported for disturbance area and volume were delayed by one year. Changes to the *Forest Management Planning Manual*, *Forest Information Manual*, and the Forest Information Portal have allowed for timely reporting of this information. In the current report two years of data is provided (both 2003-04 and 2004-05). In 2003-04 forest fires occurred on 65,199 hectares of productive forest in the AOU, while in 2004-05 fires occurred on only 640 hectares. In both years weather, insect, and disease activity resulted in significant growth loss and mortality, see figure 1.

Harvesting activities took place on 222,734 hectares of forest in 2004-05. In 2004-05, 39 management units within the Boreal Forest reported average clearcut sizes ranging from 49 to 2,825[2] hectares. Maximum clearcut sizes reported ranged from 206 to 28,761 hectares. There were 4,980 active clearcuts during the year, of these 775 (16%) were greater than 260 hectares in size. Eight management units within the Great Lakes-St. Lawrence Forest reported average clearcut sizes from 1 to 85 hectares. Maximum clearcut sizes ranged from 3 to 1,139 hectares in size. There were 876 clearcuts created in this region during the year, 24 (3%) of which were larger than 260 hectares.

The CFSA requires a portion of the money received from the harvest of Crown forests to be designated exclusively for forest renewal activities. The

Figure 1 Summary of mortality and growth loss in the AOU.



[2] The clearcuts reported considered the adjacency of previously harvested areas as per the *Forest Management Guide for Natural Disturbance Pattern Emulation*.

Government of Ontario received a total of approximately $210 million from timber sales, of which approximately $107 million went directly to funds designated for the maintenance and renewal of the forest, and for work associated with ensuring the future of the forest.

Renewal of the forest occurs both naturally and with assistance. In 2004-05, natural regeneration, both even and uneven-aged, took place on 66,071 hectares of land. Assisted renewal was carried out on 106,203 hectares. Site preparation activities, through mechanical means, use of herbicides, and prescribed burning, were completed on another 70,172 hectares. Tending activities were also conducted to improve the quality and growth of some areas of the forest. During 2004-05 tending activities, such as thinning, were carried out on 81,235 hectares of forest.

Free-To-Grow (FTG) assessments are an effectiveness monitoring tool that indicate the success of silvicultural treatments and provide information to project the future forest condition. In 2004-05, approximately 271,000 hectares were assessed. Of the total area assessed for FTG, 62 percent was approved as having achieved the FTG standard within a set time period. An additional 26 percent was approved as having achieved an alternate accepted FTG standard.

The forest industry is required to report the results of their compliance inspections to the MNR. MNR conducts inspections to verify all instances of non-compliance reported by companies. The MNR also carries out random and other planned inspections of forest operations. Of the 8,069 inspections undertaken across the province, companies conducted 6,500 and the MNR completed 1,569. The vast majority of the inspections reported compliant operations. A total of 454 remedial actions were applied by the MNR, including warnings, "stop work" orders, and administrative penalties.

All management units within the AOU must be audited at least once every five years. In 2004-05, Independent Forest Audits were undertaken on 8 management units. Audit reports were prepared for the Big Pic, Caribou, Kenora, Lakehead, Mazinaw-Lanark, Timiskaming, Trout Lake and Whiskey Jack Forests.

Forest certification involves an independent third party evaluating forest management systems and/or operations against a prescribed ecological, economic and social standard. During the 2004-05 fiscal year eight additional forests achieved certification. Five of these were certified under the Sustainable Forestry Initiative and two were certified under the Forest Stewardship Council's National Boreal Standard. One forest was certified according to the Canadian Standards Association Sustainable Forest Management Standard. In addition, all previously registered/certified forest units continued efforts to demonstrate ongoing conformance to their selected certification systems during the fiscal year.

This report describes the efforts of MNR districts, the forest industry and First Nations communities to identify and implement ways of achieving a more equal participation by Aboriginal peoples in the benefits derived through forest management planning.

A primary monitoring responsibility of the MNR is to assess the effects of forest management activities on the forest ecosystem over the long term. The final chapter of this report details policies, procedures, scientific studies and research that the MNR is undertaking to ensure that forest management guides, data, methodologies, and underlying science are available to effectively monitor and manage forest management activities.

Chapter 1
Introduction

Management of Ontario's forests has evolved through past decades from managing for timber to stewardship for all the values of the forest. With the 1995 introduction of the *Crown Forest Sustainability Act* (CFSA), Ontario adopted a policy of managing Crown forests according to the principles of sustainable forest management. Large, healthy, diverse, and productive forests and their associated ecological processes and biological diversity are conserved for future generations through the balancing of the environmental, economic and social components of forest sustainability.

The Environmental Assessment Process

In 2003 an EA Declaration Order extended and amended the 1994 *Environmental Assessment Act* approval to allow MNR to continue forest management on Crown lands in Ontario, subject to conditions. This approval covers a wide range of routine or recurring activities relating to forest access, harvest, renewal, maintenance and their planning on Crown land.

The conditions of the Declaration Order clearly define broad direction for forest management planning and complement the forest management planning principles of the *Crown Forest Sustainability Act*, 1994 (CFSA). This is the second annual report that is produced consistent with the current EA Declaration Order.

Annual Report on Forest Management

This is the tenth annual report on forest management, covering the period April 1, 2004 to March 31, 2005. In previous years information on forest disturbances, such as harvesting, forest fires, and insects, was not available until late fall of the following year. Therefore, collection of data on disturbances was completed too late in any given year for it to be included in the report. Changes to the data collection process have allowed for timelier reporting on disturbances. In this report information on forest disturbances is presented for both 2003-04 and 2004-05 fiscal years.

Also, in 2004-05 the MNR and the forest industry implemented a simplified approach for management unit annual report data submission and review. In the current year, all management units in the province submitted a single management unit annual report in November, rather than a report submitted in two parts in the spring and fall of the year. The data from these reports has been used in the preparation of this document. The data is subject to ongoing improvement and the reader is advised that changes in data may occur as improvements are made to the dataset.

New or updated data and information submitted since the previous Annual Report on Forest Management are included in this report. Errors or omissions noted since the publication of the previous report are also corrected or updated in this report. Five-year ta-

bles and graphs are included in this report to provide updated information and a means to view and assess trends in the data.

Overview

This annual report provides information to help in understanding how Ontario's Crown forests are being managed, as well as baseline information to compare with future forest management activities and annual reports. The chapters of this annual report are described as follows:

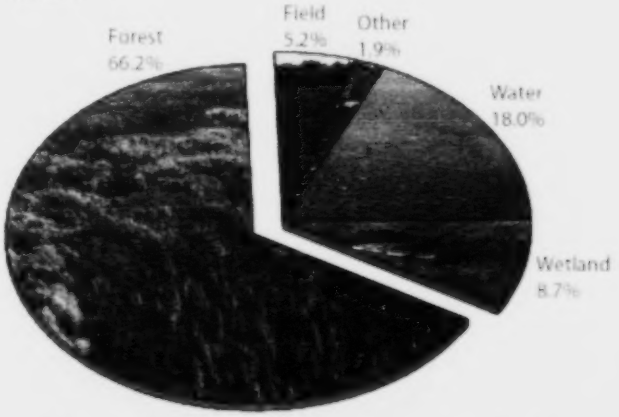
- Chapter 1 provides background for the annual report and a summary of the forests of Ontario.
- Chapter 2 outlines the legislative framework which regulated forest management planning activities in 2004-05.
- Chapter 3 summarizes forest activities and government revenue generation.
- Chapters 4 though 7 present a detailed description of forest management activities, and the systems employed by MNR to monitor forest sustainability.
- Chapter 8 presents an update on the MNR's progress in negotiations with Aboriginal peoples regarding opportunities for increased participation in the benefits of forest management planning.
- Chapter 9 concludes with progress reports on selected MNR research, scientific studies, and technical and policy development programs.

Forests of Ontario

Throughout this document, Crown land refers to land held in trust by the province for the people of Ontario and, in general, managed by the MNR. Statistics found in this chapter are from provincial inventories compiled in the *Forest Resources of Ontario 2006*. The *Forest Resources of Ontario 2006* should be consulted for a more complete description and summarization of the provincial inventories.

Ontario's 107.6 million hectare area is comprised of approximately 88.3 million hectares of land and 19.3 million hectares of water. Figure 1a illustrates the broad land classes in Ontario. Non-productive and productive forests comprise over sixty-five percent of the province. This is significantly higher than the comparable total for Canada, where forests represent only forty-two percent of the country's area.

Figure 1a Total Land and Water Area by Land Classes in Ontario



Three major ownership groups are described in this report - Crown, parks, and private or other owners. Seventy-eight percent of the province's area is Crown or publicly-owned land and water. Provincial and national parks cover an additional nine percent, and privately or federally-owned land and water encompasses the remaining thirteen percent.

For forest management purposes, the province is partitioned geographically, depending on the context. Subdivisions commonly referenced in this report include:

- Ecological Subdivisions
- Forest Regions
- Ecological Land Classification (ELC) Regions
- Administrative Subdivisions
- Management Zones
- MNR Administrative Regions and Districts
- Management Units

Ecological Subdivisions

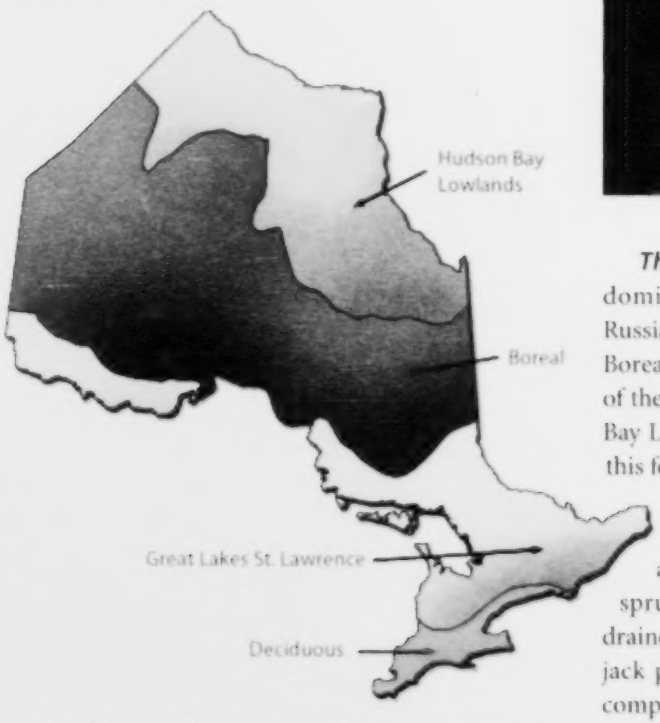
Forest Regions of Ontario

Four major forest regions are represented in Ontario - the Deciduous Forest region in southern Ontario,

the Great Lakes-St. Lawrence Forest region in southern and central Ontario, the Boreal Forest region in Northern Ontario, and the Hudson Bay Lowlands region in the far north. Over 97 percent of Ontario's population lives within the Great Lakes-St. Lawrence and Deciduous Forest regions.

Each forest region is characterized by its own climate, forest ecosystems, and associated wildlife species. North-south shifts in temperature and east-west gradients in precipitation largely determine the extent of these forest regions. Natural transition zones also occur between forest regions. As a result, certain tree species may appear in what seem to be inappropriate forest regions. For example, maple or white pine can be found within the southern reaches of the Boreal Forest. A map of the forest regions of Ontario is shown in Figure 1b.

Figure 1b Ontario's Forest Regions



The Hudson Bay Lowlands is one of the largest low-relief expanses of wetlands in the world. With an area of 25.8 million hectares, it is comprised of both treed and open muskeg (74 percent), dotted with thousands of small lakes and ponds. Productive forest cover is less than 17 percent and is typified by stunted tamarack (also known as larch) and black spruce growing along riverbanks and other well-drained areas. The Hudson Bay Lowlands support a great variety of wildlife including polar bears, geese, and other animals normally associated with Arctic habitats. The Hudson Bay Lowlands are greatly affected by a cold northern climate, and contain all of Ontario's tundra. The region also contains Ontario's largest park, the 2.3 million hectare Polar Bear Provincial Park. Figure 1c shows an aerial view of a landscape typical of the Hudson Bay Lowlands.

Figure 1c Black Spruce, Tamarack and muskeg typical of the Hudson Bay Lowlands

The Boreal Forest is a world-wide band of conifer dominated forest stretching across Scandinavia, Russia, Alaska, and northern Canada. In Ontario, the Boreal Forest region extends from the northern limits of the Great Lakes-St. Lawrence Forest to the Hudson Bay Lowlands. With an area of 49.8 million hectares, this forest region is, by far, the largest in the province.

In the Boreal Forest, the tree species that are present are dictated by the particular soil types and terrain conditions. For example, black spruce and tamarack are often found in poorly-drained areas, while trembling aspen, white birch, and jack pine grow on well-drained sites. Black spruce comprises 50 percent of all tree species in the Boreal Forest by growing stock volume.

Most boreal softwoods (jack pine, black spruce, and tamarack) and intolerant hardwoods (trembling aspen, white birch, and balsam poplar) grow in even-aged stands. Boreal forests are characterized by natural disturbance, and are heavily influenced by the

size, intensity, and frequency of fires that have burned across the landscape. Winds also affect forest conditions by blowing down trees or forest stands. Insects can defoliate large areas of forest. Figure 1d shows a birch stand found within the Boreal Forest.

Figure 1d A typical Boreal Forest landscape in winter.

The Great Lakes-St. Lawrence Forest region extends inland from the edges of the Great Lakes and the St. Lawrence River in central and southern Ontario. This forest region represents 25 percent of Ontario's actively managed Crown forest. The greatest concentrations of this forest type occur on the north and east shores of Lake Huron, in the Algonquin Park area, and in the Great Lakes-Boreal transitional zone that stretches from Thunder Bay to Fort Frances in northwestern Ontario.

Sugar maple, white pine, red pine, eastern white cedar, hemlock, tamarack, black spruce, white spruce, red oak, white oak, red maple, basswood, ash, poplar, yellow birch, and white birch are all present in this zone. This forest region has thin soils over granite bedrock, and some areas of deep well drained soils. The great diversity of sites and habitat in this region supports many wildlife species. Figure 1e illustrates a white pine stand typical of the Great Lakes-St. Lawrence Forest.

Figure 1e White pine and white spruce stand typical of the Great Lakes-St.Lawrence Forest

The Deciduous Forest is located in the southernmost part of Ontario, and is the only occurrence of this type of forest in Canada. Situated primarily in smaller pockets of forest on private land and within provincial parks on the north shore of Lake Erie, the Deciduous (or Carolinian) Forest region exists in the most densely populated area of Ontario. This region is now home to more than 25 percent of Canada's population, even though it covers less than one percent of the country's land mass. The region is over 3 million hectares in size, but less than 17 percent is forest. More than 70 percent of this region is agricultural land, while most of the remainder is urban. Forests in this region are now mostly found in locations with low agricultural potential, such as sand plains and bottomlands. These forest fragments have been greatly modified by human activities.

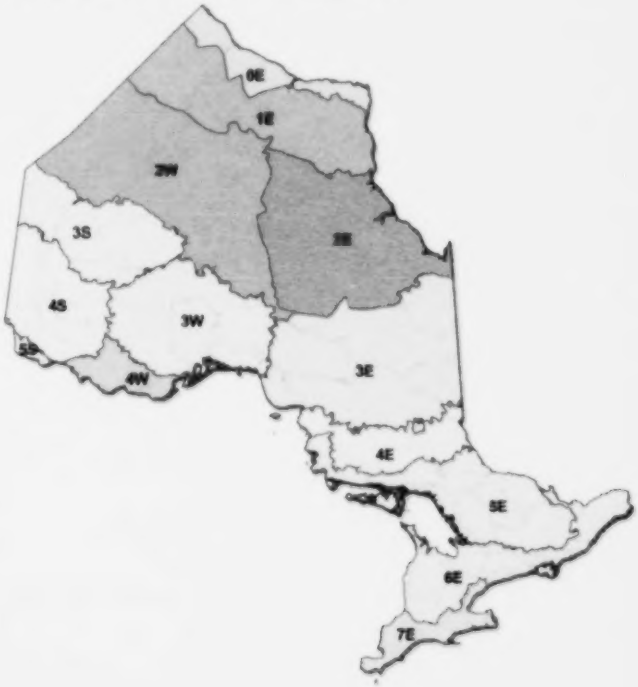
Surface deposits ranging from gravel to clay cover the limestone bedrock that underlies the Deciduous Forest region. Maple, sassafras, walnut, and several varieties of oaks grow here. The Deciduous Forest region generally has the greatest diversity of tree species, while possessing the lowest proportion of forest in Ontario. With its rich forests and warm climate, several unique wildlife species, such as opossum and red-bellied woodpecker are present. Good examples of Deciduous Forest exist on Lake Erie's northern shore, in parks such as Wheatley, Rondeau, and Turkey Point. Figure 1f shows a multi-species hardwood forest typical of the Deciduous Forest region.

Figure 1f A multi-species hardwood stand typical of the Deciduous Forest region

Ecological Land Classification (ELC) System

The ELC system is a hierarchical and consistent framework for classifying landscape and site-level ecosystems formed by combinations of geologic, climatic, vegetative, soil, and landform features. At the broadest scales the ELC system is guided by a set of 14 ecoregions. Each ecoregion is further subdivided, resulting in a total of 71 ecodistricts across Ontario. A map illustrating the ecological regions of Ontario is shown in figure 1g.

Figure 1g Ecological regions of Ontario



Administrative Subdivisions

Management Zones

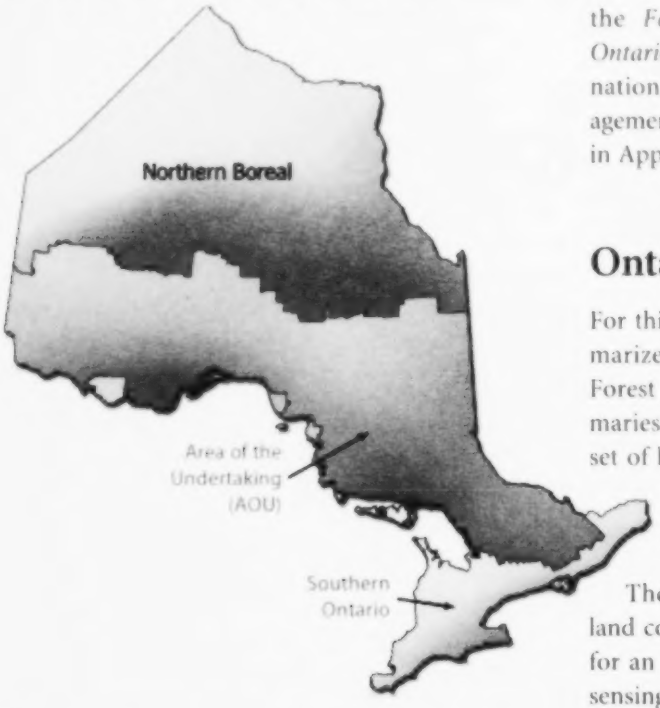
Ontario, comprised of 107.6 million hectares of land and water, is divided into three forest management zones (Figure 1h). The Northern Boreal Forest (42.1 percent of Ontario) describes the large expanse of Boreal Forest and Hudson Bay Lowlands in the far north. The Area of the Undertaking (40.7 percent of Ontario) refers to the middle zone where forest management planning and associated operations are currently carried out on Crown lands. Southern Ontario (7.6 percent of Ontario) is an area of mostly private land, where the majority of the population of Ontario lives. The Great Lakes make up the remaining 8.9 million hectares, or 8.2% of Ontario.

The Area of the Undertaking (AOU) is an area consisting of approximately 34.8 million hectares of

1E
2W
2E
3W
3E
4W
4E

Productive forest (all ownerships)on which forest management activities are conducted in Ontario. The northern boundary is generally the limit of current commercial operations; the southern limit is generally the limit of the forest on Crown Land. Crown land within the AOU is subject to the conditions of the Environmental Assessment approval.

Figure 1h Ontario's forest management zones



The forest area managed for harvest is 26.2 million hectares in size. Within this area the net forest area available for forest operations is limited to 18.8 million hectares, or 17.5 percent of Ontario (Figure 1i).

Administrative Regions and Districts

MNR administrative region and district boundaries are shown in figure 1j. For administrative purposes, the province is divided by the MNR into three regions, each with a regional office - Northwest Region (Thunder Bay), Northeast Region (Timmins/South Porcupine), and Southern Region (Peterborough). These three regions are subdivided into a total of 26 MNR administrative districts, each with a designated local office. For the purpose of carrying out forest management activities, MNR districts are further divided into individual forest management units.

Management Units

A forest management unit is an area of forest designated under section 7 of the *Crown Forest Sustainability Act, 1994*. MNR Regional Directors approve Forest Management Plans (FMP) developed for management units, based on direction in the *Forest Management Planning Manual for Ontario's Crown Forests*. For a more complete explanation, see Chapter 2. A map and list of the management units in effect as of April 1, 2004 is provided in Appendix 1.

Ontario's Forest Inventory

For this annual report, the province has been summarized using both Ontario Land Cover data and Forest Resources Inventory (FRI) data. These summaries are shown in Appendix 2, using a common set of land classes for the province as a whole, and the Area of the Undertaking.

Ontario Land Cover Database

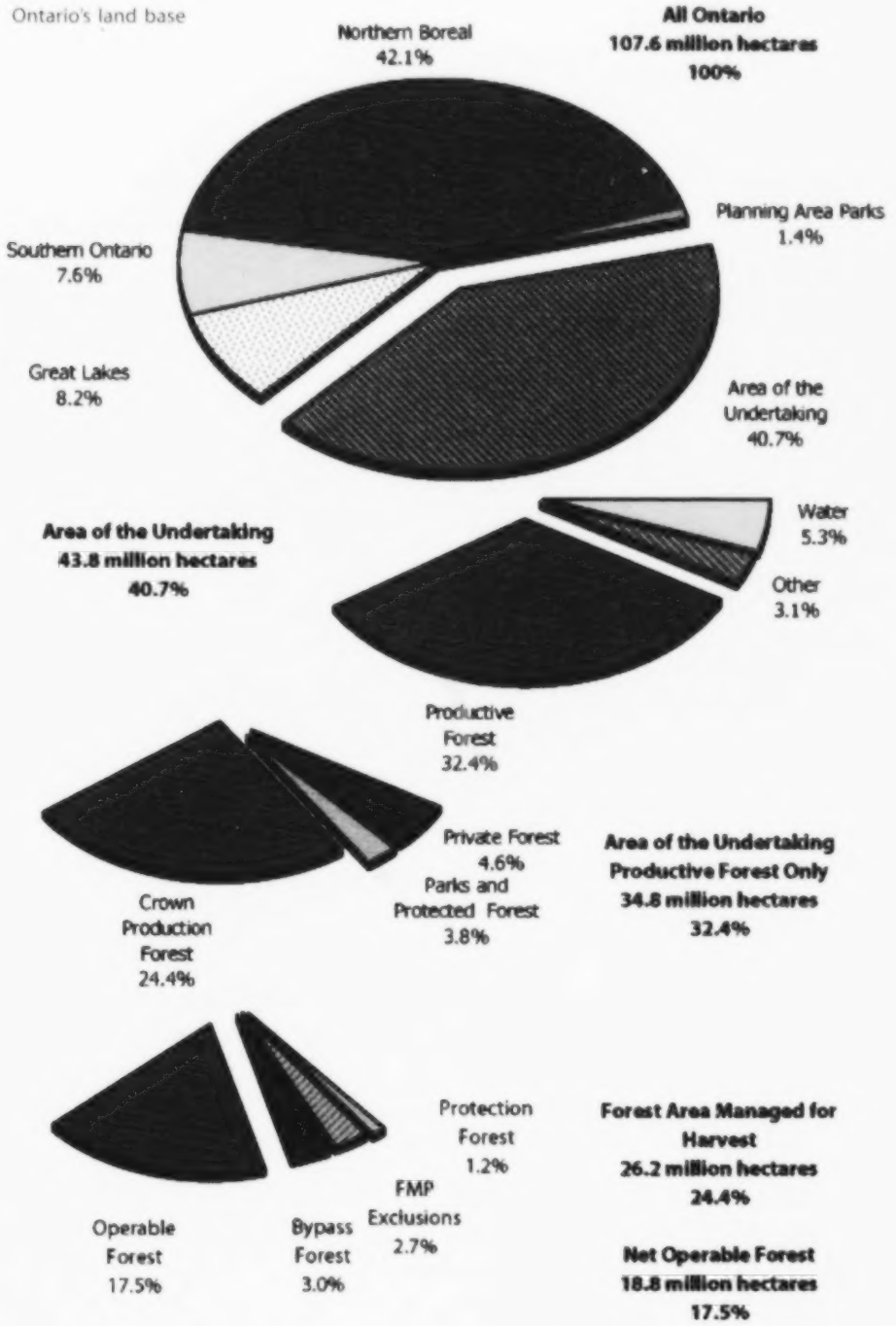
The Ontario Land Cover Database is the first land cover classification in Canada to be completed for an entire province wholly from satellite remote sensing data. The Ontario Land Cover data was derived from digital, multispectral LANDSAT 7 Thematic Mapper data recorded on a range of dates between 2000 and 2002. The total provincial area summarized using this coverage is shown in Appendix 2.

Forest Resources Inventory (FRI)

Using aerial photographs and field verification, the FRI is created by classifying forest stands and other areas into broad physical categories including productive forest, non-productive forest, non-forested land, and bodies of water.

Each component is further classified by its ownership and land use. The FRI provides descriptive information in the form of interpreted aerial photographs, forest stand maps, and computerized

Figure 1i Ontario's land base



data, used for management planning and to monitor the health of the forest.

During the period of this report, a new inventory had to be conducted on each management unit approximately every 25 years. Updates were required at the start of each new FMP to reflect all changes to the forest (i.e., depletions and accruals) that occurred prior to the commencement of the new FMP. Depletions include harvest and natural reductions, such as those caused by wildfire, insects, disease, and severe

Sioux Lookout
Red Lake
Nipigon
Cochrane
Kenora
Dryden
Hearst
Fort Frances
Thunder Bay
Wawa
Timmins
Kirkland Lake
Chapleau
Sault Ste Marie
Sudbury
North Bay
Parry Sound
Pembroke
Kemptville
Bancroft
Peterborough
Midhurst
Aurora
Cambridge
Aylmer

Figure 1j MNR administrative boundaries

weather events. Accruals include the results of forest renewal and tending activities for both assisted and naturally regenerated areas.

FRI updates occur only within the AOU for use in FMPs. The average age of the FRI within the AOU is approximately seven years. Inventories of southern Ontario and the extreme north are more than 20 years old. A vast area of the extreme north is not inventoried. For comparison purposes, FRI summaries for both the Planning Area and the inventoried area are included in Appendix 2.

Other Sources

Other documents are available to provide background about forest management in Ontario. They include:

- the *Declaration Order* (MNR-71) *Regarding MNR's Class Environmental Assessment Approval for Forest Management on Crown Lands in Ontario* (June 2003) which amends and extends the Timber Class EA Approval. It outlines conditions for forest management on Crown land in Ontario;
- the *Crown Forest Sustainability Act*, enabling legislation which provides for the regulation of forest planning, public involvement, information management, operations, licensing, trust funds for reforestation, processing facilities, remedies and enforcement;
- the *Policy Framework for Sustainable Forests*, which lays out the principles for managing forests sustainably in Ontario;
- MNR's *Statement of Environmental Values*, which sets out the environmental principles that govern the MNR's management of Ontario's natural resources;
- the *Forest Management Planning Manual for Ontario's Crown Forests* (June 2004), which provides direction for all aspects of forest management planning for management units in the Area of the Undertaking;
- the *Forest Operations and Silviculture Manual*, which is a compendium of guidance and direction for the conduct of operations authorized by approved FMPs;
- the *Scaling Manual*, which provides standard instructions for determining the quantity, quality and movement of Crown timber harvested in Ontario;
- the *Forest Information Manual*, a technical document that describes the requirements and standards for information needed to support forest management planning on Crown lands in Ontario;
- the *Forest Resource Assessment Policy*, which provides provincial direction for the assessment of Ontario's Crown forest resources. This policy supports the provisions in the CFSA for determining forest sustainability and managing Ontario's Crown forests in a sustainable manner.
- the *Forest Resources of Ontario 2001*, a snapshot of statistics on the state of Ontario's forests;
- the *State of the Forest Report, 2001*, the first such report on the condition of Ontario's forest resources, for the period 1995-2000 (as required by condition 84 and Appendix 22 of the Timber Class EA approval, the CFSA, and the *Forest Resource Assessment Policy*); and
- Ontario's forest management guides, which include technical considerations, standards, guidance, and performance targets used during the preparation and delivery of FMPs. They may also include suggestions on the best ways of carrying out forest management operations, sometimes referred to as "best management practices".

Further information on these sources, and electronic versions of many of these documents, are available from the Forest Management portion of the MNR's website: http://ontariosforests.mnr. gov.on.ca/spectrasites/internet/ontarioforests/publications.cfm Printed copies of this report contain a CD with additional background information gathered from our websites and provided for the convenience of the reader.

Chapter 2
Forest Management Planning

As discussed in the previous Annual Report on Forest Management, the Declaration Order MNR-71 (June 25,2003) extends and amends the Class EA Approval to allow MNR to continue forest management planning on Crown Lands subject to the conditions of the Declaration Order. Many of the conditions outlined in the Declaration Order directly apply to the forest management planning system and as such a revision to the 1996 Forest Management Planning Manual (FMPM) was required. As part of the FMPM revision, the writing team also made significant efforts to increase efficiencies and reduce time and costs associated with overall planning. The revised FMPM was regulated under the *Crown Forest Sustainability Act* in June (2004) and came into effect in September (2004).

With a revised FMPM, MNR and industry are faced with significant adjustments to forest management planning approaches. Some of the revised FMPM requirements became effective on September 1st, 2004 while others will be phased in over time as forest management plans are renewed.

The biggest change from the 1996 to the 2004 FMPM is the change from 5 year planning periods to ten year planning periods. The change to a ten year plan period reduces the overall planning effort required over the ten year plan period. The FMPM was reorganized to separate the planning process from the plan content requirements. Another significant change was made to address reporting requirements. Reports are prepared annually and include running totals which allow for regular assessment of progress towards plan targets. In addition, more detailed reports for years three, seven and ten are required which negates the need for separate five year summary reports (a requirement of the previous FMPM). There are also some major revisions to road planning which include a new requirement for planning teams to assemble information on existing roads on the management unit using the most up-to-date information available and document management strategies for all forestry roads.

Other changes to the FMPM include changes to the sections dealing with: public consultation, local citizens committees, issue resolution, Aboriginal involvement, long term management direction, social and economic requirements, roads and water or AOC crossings, resource stewardship agreements, monitoring and assessment, and documentation requirements.

These changes were primarily intended to meet the conditions of the EA Declaration Order and to make the new planning process as clear as possible.

Forest Information Manual

The *Forest Information Manual* describes the requirements for exchanging information about the management of Crown forests between the forest industry and the MNR. Technical Specifications associated with the *Forest Information Manual* continue to evolve and are being adjusted to maximize the efficiency of data exchange and to improve utility of exchanged data. A review of the *Forest Information*

Manual is underway in anticipation of a revision to better align it with the new planning manual.

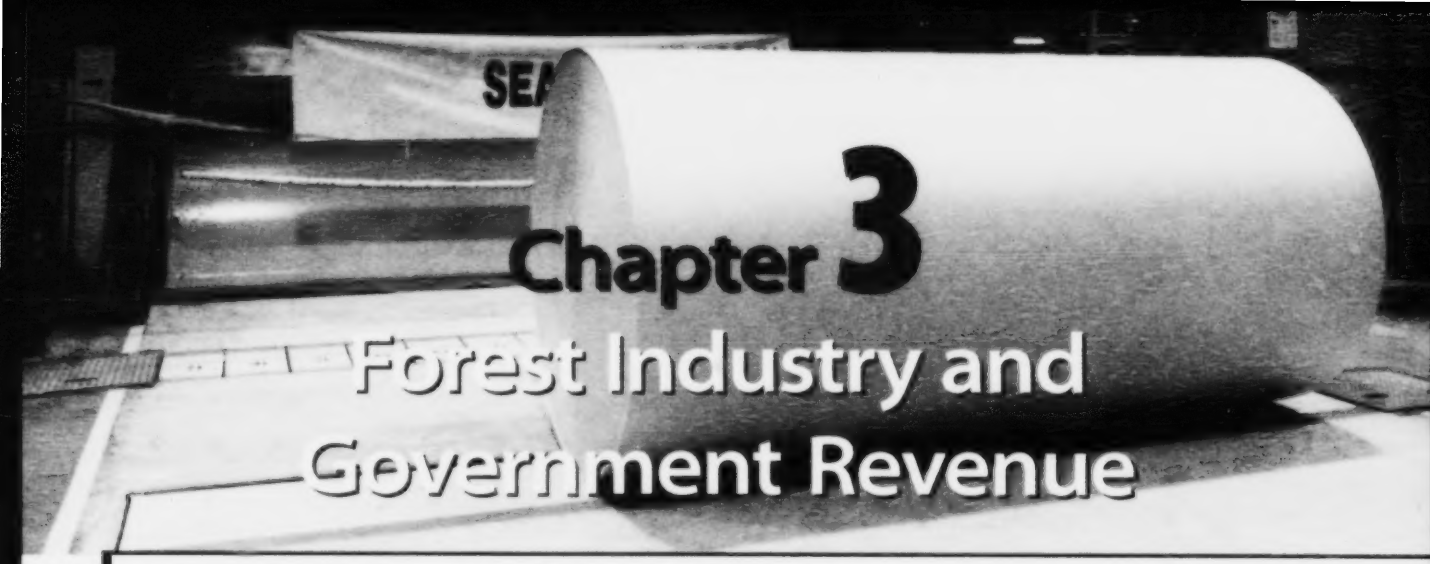
Forest Information Portal

The forest information portal is a website application that provides a single access point to exchange information between the MNR and the forest industry in Ontario. Improvements to the Portal were made to support the submission of information from the forest industry to the MNR for the 2004-05 management unit annual reports. User requirements and design activities for a new module that will automate the development and distribution of annual report volume and compliance information is underway.

Forest Management Units and Plans

The forest management planning system is based on, or applied to, a planning area known as a forest management unit. The Ministry of Natural Resources has continued efforts to rationalize and consolidate forest management units to realize efficiencies in forest planning and FMP implementation. As of April 1, 2004, the Area of the Undertaking was divided into 48 management units. One additional management unit (for a total of 49) is comprised of Crown land in southern Ontario outside the Area of the Undertaking. This is a reduction of 1 management unit compared to the previous year (i.e. April 1, 2003). Further reductions in the number of management units are under review and expected in the near future.

Appendix 1 provides a map and list of forest management units as of April 1, 2004. During 2004-05, management units ranged in size from 204,963 hectares to 1,861,455 hectares of managed Crown land, with an average unit size of 710,131 hectares. There were 7 forest management plans approved for implementation in 2004, while work was initiated or continued on an additional 19 plans. Appendix 3 includes a listing of the 2004 FMPs, as well as the complete plan renewal schedule for all management units.



Chapter 3
Forest Industry and Government Revenue

Ontario's Crown forests provide numerous opportunities and benefits, for recreation, tourism, hunting, trapping, fishing, and food production. For example, millions of Ontario residents reported participation in various forest based leisure activities (Table 3a).

Ontario's forests supply the basic resources for a variety of industries, including lumber, structural board, pulp, paper, and newsprint. In addition, facilities that support forest activities and numerous service industries also depend on Crown forests. While there are many users of the forests of Ontario, (see Table 3a), this chapter focuses on the forest industry, and the revenues provided by the forest industry to the government of Ontario.

Forest Products Industry

The logging, wood products and paper manufacturing sectors, plus other related industries, comprise the forest products industry. The logging industry includes both large and small contractors, as well as large, mill-owned operations. The contractors may work independently or directly for company-owned mills.

The wood products manufacturing industries include businesses such as sawmills, veneer mills, and structural board plants producing both construction materials and specialty wood products. The capital investments in these facilities range from a few thousand to over $250 million dollars.

Table 3a Persons participating in forest-based leisure activity in Ontario

	Persons Participating in Ontario				
Leisure Activity	**2000**	**2001**	**2002**	**2003**	**2004**
Bird Watching	1,019,000	977,000	1,003,000	1,067,000	984,000
Canoeing	1,257,000	1,154,000	1,220,000	1,079,000	1,208,000
Cross-Country Skiing	609,000	477,000	505,000	492,000	517,000
Fishing	1,632,000	1,498,000	1,650,000	1,591,000	1,407,000
Hunting	479,000	417,000	459,000	344,000	339,000
Mountain Biking	n/a	667,000	679,000	671,000	735,000
Snowmobiling	620,000	450,000	470,000	340,000	374,000
Walking/Hiking	4,406,000	3,962,000	4,143,000	4,204,000	4,241,000

Source: Print Measurement Bureau Readership Surveys

Pulp and paper mills are the largest types of plants for converting wood fibre to forest products. A new pulp mill can cost close to $1 billion. Outputs from pulp and paper mills represent almost 60 percent of the value of all forest product shipments.

The value of sales from Ontario's forest products sector has remained relatively stable averaging $18.7 billion over the five year period ending in 2004 (Table 3b). The volume of products manufactured in Ontario is summarized in Figure 3a.

Value added, the amount the industry actually contributes to the Ontario gross provincial product (this eliminates the double counting effect of sales between the forest product manufacturers and their suppliers), continued to fall in 2004-05 to $7.4 billion from $8.1 billion in 2002. Table 3c shows the value added in 2004 for the logging industry and both major forest sector industries - the wood product industries, and the paper and allied industries.

Employment within the forest industry in 2004 was estimated at 230,000[3]. Included in this figure are direct, indirect, and induced jobs. Table 3c shows direct employment only[4].

As well as being a major employer, the forest industry annually invests in capital improvements and mill expansions. The forest industry had capital and repair expenditures of $1.13 billion in 2004, which decreased from $1.31 billion in 2003.

Table 3b Ontario forest products sector sales

Year	Value of Shipments (million $)
2000	$18,709
2001	$18,420
2002	$18,869
2003	$18,920[1]
2004	$18,763

[1] The logging component year 2000 total was not available , and was estimated using 1999 values

Source: Statistics Canada 2001

[3] Statistics Canada and MNR's Socio-Economic Impact model.

[4] Statistics Canada Labour Force Survey is using a new Standard International Classification system which renders direct comparisons with previous years inappropriate.

Figure 3a Volume of forest products produced in Ontario mills.

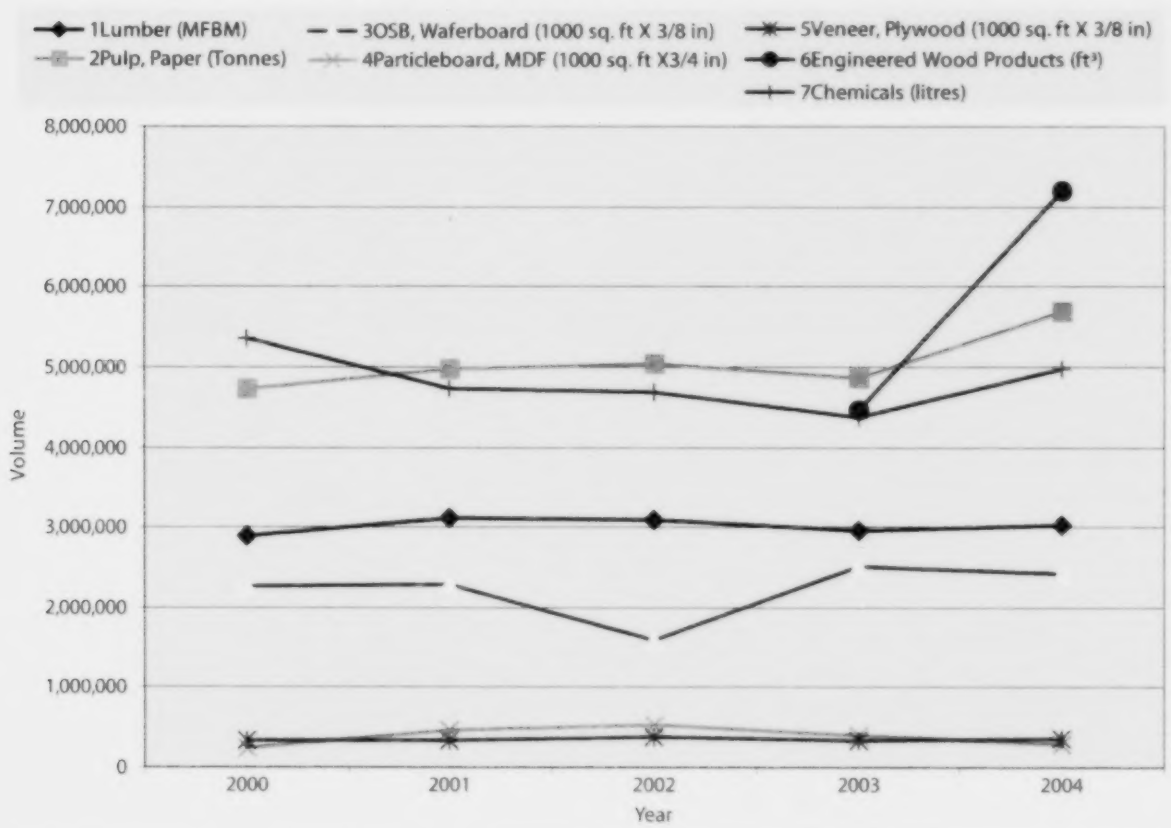


Table 3c Distribution of manufacturing activities by sector and direct employment within each sector in 2004-05

Sector	Number of Establishments	% of Canadian Total	Number of Employees	% of Canadian Total	Total Value Added Value Added (million $)	% of Canadian Total
Logging[1]	1,657	17%	6,698	14%	$651	12%
Wood Product Manufacturing[2]	587	25%	24,818	20%	$2,556	17%
Paper Manufacturing[3]	346	48%	31,327	36%	$4,210	32%
Total	**2,590**	**30%**	**62,843**	**24%**	**$7,417**	**22%**

Number of establishments and Value Added - Annual Survey of Manufacturers
Number of employees - Labour Force Survey
[1] Logging sector estimates are based on 2001 data, as Statistic Canada no longer reports this informations
[2] Includes sawmills, wood preservation, veneer, plywood and engineered wood products manufacturing.
[3] Includes pulp, paper, paperboard and converted paper product manufacturing.

Source: Statistics Canada

Ontario's Forest Industry Facility Statistics

Ontario's Forest Industry Facility Statistics is produced annually and provides information about forest resource processing facilities (mills) in Ontario. Facilities provide data to the Ministry of Natural Resources (MNR) annually (in accordance with the Crown Forest Sustainability Act) as a requirement of the licensing system. MNR also collects and maintains data on wood volume harvested through the Timber Resource Evaluation System (TREES). These data are combined to give a reflection of forest industry activity in Ontario. The information collected represents the primary forest resource processing sector.

A copy of the most recent edition of Ontario's Forest Industry Facility Statistics is available at the MNR website: http://www.mnr.gov.on.ca/MNR/ The report is also included on the CD that accompanies printed versions of this provincial annual report.

Forest Sector Employment

Based on the 2001 Statistics Canada census, 28 Ontario communities, most located in Northern Ontario, had at least 20 percent of their labour force employed in the forest industry. Appendix 4 lists these Ontario communities, shows the total labour force for each community, and identifies the percentage that worked in the forest sector.

Harvest Licence System

Ontario's Crown forests are only harvested by companies or individuals that hold one of two types of licences - Sustainable Forest Licences (SFLs) and Forest Resource Licences (FRLs). The total number of both licence types issued in the year 2004-05 is shown in Table 3d.

Among other requirements, a SFL requires the licensee to prepare forest management plans following the direction of the *Forest Management Planning Manual for Ontario's Crown Forests*. The licensee is responsible for implementing forest management plans by carrying out access, harvest, renewal, and maintenance activities. The SFL holder must follow the rules and guidelines set by the MNR to ensure sustainable forest management. FRL holders follow forest management plans approved by the MNR and must operate to ensure the long-term health of the forest. For further details on Ontario's forest management planning system, see Chapter 2.

Table 3d Number of licences issued in 2004-05, by licence type

Licence Type	Number of Licences Overlapping	Not Overlapping	Total
Sustainable Forest Licence	0	47	47
FRL < 300 hectares	3,651	451	4,102
FRL > 300 hectares	250	109	359
FRL Salvage	0	1	1
Total	**3,901**	**608**	**4,509**

Resource Stewardship Agreements

Resource Stewardship Agreements (RSAs) are a means for SFL holders and licensed tourism establishments, two key forest users, to collaborate on the development of planning solutions proposed during the forest management planning process. The *Tourism and Forestry Industry Memorandum of Understanding* (2001) provides direction for the development of these RSAs. The Memorandum of Understanding recognizes the value of two industries working co-operatively to understand each other's needs and of working together in the development of planning proposals. While this co-operative approach to planning has been used in some parts of Ontario for the past 10 years, the Memorandum of Understanding commits the industries and government to support use of the process everywhere in the Crown forest. Use of the RSA process is intended to provide greater security for the two industries and help them avoid costly and time-consuming forest management conflicts.

Ontario's Stumpage System

In 2004-05, the Government of Ontario received direct payments from the forest industry in the form of stumpage fees, and indirect revenue from taxes. Forest companies pay a stumpage fee to the Crown for every cubic metre of timber harvested. A market-based pricing system is used by the MNR to calculate the stumpage fees that companies and individuals pay for harvesting timber from Crown land. In times of strong market prices for forest products, the stumpage system triggers higher fees. In poor markets, harvesters pay lower fees.

The Crown's stumpage fees have four components:

- A minimum charge per cubic metre of harvested timber, regardless of the species, goes to the Consolidated Revenue Fund of the province. This charge is adjusted annually. Table 3e shows the changes in the minimum charge since 2000.

Table 3e Minimum stumpage charge per cubic metre

Fiscal Year	Minimum Charge
2000/01	$3.28
2001/02	$3.40
2002/03	$3.44
2003/04	$3.48
2004/05	$3.60

- A forest renewal levy to provide dedicated funding for forest renewal. This charge varies depending upon the tree species and its anticipated renewal cost. Forest renewal charges are held in either a Forest Renewal Trust Fund or a Forest Renewal Special Purpose Account and can only be used for regenerating and maintaining the health of Ontario's forests.
- A residual value charge, paid to the province's Consolidated Revenue Fund. The calculation of this charge varies from zero in times of low forest product prices to about $23 per cubic metre when product prices are high depending on species and product sector.
- A Forestry Futures Trust charge is also applied; this charge is a $0.48 per cubic metre of timber harvested. The Forestry Futures Trust is managed by the Forestry Futures Trust Committee, an independent committee appointed by the Crown. It funds projects that meet MNR-approved criteria. To qualify, projects must be: a silvicultural activity on Crown land that addresses renewal of trees killed or damaged by fire; renewal of land where a licensee becomes insolvent; forest protection from insect or disease infestation; intensive stand management related to a critical wood supply; or, expenditures for Independent Forest Audits, Forest Resource Inventories, or conversion charges[5].

Table 3f shows the direct payments from the forest industry to the various government accounts during the last five fiscal years. The Forest Renewal Special Purpose Account will be phased out when all management units, currently under direct management by the MNR, are converted to SFLs. Payments to the Special Purpose account were lower than normal because there were no forest renewal charges for Spruce, Balsam, Jack Pine, Poplar, White Birch and Larch harvested on the Cochrane-Moose River Forest from December 2003 until March 2005.

[5] Conversion charges are used to assist new, smaller SFLs with costs associated with the establishment of an SFL (e.g. inventory).

Table 3f Crown charge payments by the forest industry

Year	Forestry Futures Trust	Consolidated Revenue Fund	Forest Renewal Trust	Forest Renewal SPA[d]	Total Payments
2000/01	$11,180,600[a]	$105,191,500	$83,893,900	$2,306,800	**$202,572,800**
2001/02	$11,087,400[b]	$90,159,925	$67,363,300	$2,613,700	**$171,224,325**
2002/03	$11,880,265[c]	$90,579,662	$88,951,235	$3,111,670	**$194,522,832**
2003/04	$10,301,366	$104,492,746	$69,092,327	$1,391,232	**$185,277,671**
2004/05	$11,726,196	$113,707,893	$84,379,204	$140,943	**$209,954,236**

[a]Conversion funds were not collected in 2000/01
[b]Includes conversion funds of $100,349
[c]Includes conversion funds of $50,044
[d]Amounts are as of March 31, 2005

Note: Funds in the Forest Renewal Trust, the Forest Renewal Special Purpose Account, and the Forestry Futures Trust are not formally counted as revenue by the province, although funds in the Forest Renewal Special Purpose Account are held in the province's Consolidated Revenue Fund.

THE MINISTER'S COUNCIL ON FOREST SECTOR COMPETITIVENESS

In November 2004 the Minister of Natural Resources appointed a 17 member council on Forest Sector Competitiveness. The council was comprised of persons representing the forest industry (6), labour (2), First Nations (2), communities (3), other stakeholders (2), a value added expert, and a financial expert.

The formation of the council was driven by a downturn in the Forest Industry. When the council was formed, 12 mills across Northern Ontario were identified at risk of closure. The loss of these facilities would reduce employment in the north by 7,500 direct jobs and 17,500 indirect jobs. An additional 13,000 indirect jobs would also be lost in Southern Ontario. Potential government revenue losses (federal, provincial and municipal combined) were estimated to be in excess of $900 million.

The council identified that action was needed on a number of key issues including:

- Wood supply estimates –increasing the accuracy of wood supply estimates to improve investor confidence;
- Delivered wood costs – delivered wood costs in Ontario were found to be higher than in many competing jurisdictions;
- Energy – rising energy costs severely impact an industry where a third of operating costs are for electricity, and
- Investment climate – more active government participation in investment and incentive programs would be helpful.

The role of the council was to develop recommendations for actions that could help address the crisis. In May of 2005, a final report was released which contained 26 recommendations. Future annual reports will detail significant actions taken by the MNR to implement these recommendations. A copy of the report is available on the MNR's website: http://www.mnr.gov.on.ca or on the CD attached to printed copies of this report.

Private Woodlands

Ontario has 6.6 million hectares of productive forests under private ownership, or 14 percent of the province's inventoried productive forest landbase. Approximately 98.6 percent (2.0 million hectares) of the productive forest south of the AOU is privately owned, while 13.2 percent (4.6 million hectares) of the productive forest in the AOU is privately owned. Private forests account for 13.9 percent of Ontario's growing stock, including almost one-half of the gross total volume of hard maple and "other hardwoods".

In 2004, annual returns from forest resource processing facilities indicate that 8% of the gross total coniferous volume and 27% of the gross total deciduous volume processed in Ontario originates from private land. This equals 14% of the total volume processed. However, this does not fully recognize the contribution of Ontario's private land to provincial wood supply. Smaller facilities (processing less that 1,000 m3/year) are not required to be licensed and do not file annual returns. Wood that leaves the province and wood that is not processed at a facility (e.g., fuelwood) are also not accounted for. The total contribution of private land could be closer to 16%. Table 3g summarizes volume originating from private land in Ontario that is processed at licensed facilities.

Table 3g Wood volume from private land processed at licensed facilities.

Reporting Category		2000*	2001*	2002*	2003	2004
Hardwood	Volume (m^3)	1,360,598	1,888,843	1,656,919	2,506,999	2,437,828
	Volume (%)	16%	24%	20%	26%	27%
Softwood	Volume (m^3)	1,346,350	1,403,786	1,579,755	1,757,521	1,487,198
	Volume (%)	7%	8%	8%	10%	8%
Combined Hardwood & Softwood	Volume (m^3)	2,706,948	3,292,628	3,236,674	4,264,520	3,925,026
	Volume (%)	9%	13%	11%	15%	14%
Estimated Total from Private Land[2]	**Volume (%)**	**11%**	**15%**	**13%**	**17%**	**16%**

* yearly data updated from previous annual reports
[1] Source: Facility Annual Returns (not verified); volume of whole tree chips (tonnes) converted to cubic metres (m^3) with a 1.1 conversion; volume received from other facilities not included.
[2] Estimate includes a 2% increment to reflect smaller facilities, wood that leaves the province and wood that is not processed at a facility (e.g., fuelwood).

Private Land Initiatives

In accordance with applicable laws, the ultimate decision of how private land in Ontario will be managed is made by the landowner. The MNR's private woodland initiatives encourage landowners to move towards the standard set by the definition of "good forestry practices" in the *Forestry Act*:

> *"...the proper implementation of harvest, renewal and maintenance activities known to be appropriate for the forest and environmental conditions under which they are being applied and that minimize detriments to forest values including significant ecosystems, important fish and wildlife habitat, soil and water quality and quantity, forest productivity and health and the aesthetics and recreational opportunities of* the landscape..."

MNR encourages stewardship of this resource and provides a framework for sustainability by:

- co-ordinating the programs and efforts of the many agencies and groups interested in promoting stewardship;
- providing education and skill training opportunities for landowners to become more knowledgeable about stewardship;
- providing effective policies as incentive to foster stewardship of woodlands, and
- providing legislative support.

The framework consists of both legislative and incentive components.

The Legislative Component

At the provincial level, the legislative component includes:

- the *Planning Act* and the Provincial Policy Statement;
- municipal tree bylaws passed under the *Municipal Act*, and
- other legislation targeted to protect landscape features and promote good forest management.

The provisions of the *Planning Act* and *Municipal Act* provide a basis for municipalities to protect woodlands and their associated values. However, they are discretionary and not mandatory in nature. Monitoring developments in legislation and in the application of the legislation by municipalities may provide insight into how municipalities are addressing local concerns and pressures.

Significant Woodlands in the Provincial Policy Statement The Provincial Policy Statement (1997), which includes provisions for significant woodlands, was issued under the authority of Section 3 of the *Planning Act*. In accordance with Section 3 of the *Planning Act*, the policies of the Provincial Policy Statement must be reviewed every five years. The purpose of the review is to determine the scope and nature of changes, which are required to effectively protect provincial interests in land use planning. As a

result of the review, Section 3 of the *Planning Act* has been amended to require that all decisions affecting land-use planning matters "shall be consistent with" the policy statements issued under the *Planning Act* – this strengthened from the previous wording "have regard for". This amendment came into force on March 1, 2005 and enhances provisions for significant woodlands.

The Provincial Policy Statement indicates that development and site alteration may be permitted in significant woodlands south and east of the Canadian Shield, if it has been demonstrated there will be no negative impact on the natural features or ecological functions for which the area is identified. The MNR may provide expertise and technical support to municipalities in efforts to determine the significance of woodlands in their planning and development decision making. Technical expertise is also provided to the Ministry of Municipal Affairs and Housing for its roles under the *Planning Act*.

Tree Bylaws Ontario municipalities have traditionally had the authority to regulate the harvest of trees on private land through various statutes. Counties, regional municipalities and a few specific townships in southern Ontario were first able to pass tree bylaws through the *Trees Conservation Act* in 1946, then the *Trees Act* in 1950, and finally the *Forestry Act* (1998 amendments). Under the *Municipal Act* in 1994, all local municipalities with a population of greater than 10,000 could regulate tree cutting. Due to the population limit, bylaw provisions were not accessible to all municipalities.

To simplify the process and authority for tree bylaws, provisions were consolidated into the new *Municipal Act* (2001) which took effect on January 1, 2003. Upper-tier municipalities (counties and regional municipalities), lower tier municipalities (townships) and single tier municipalities now have equal access to tree bylaw powers. Provisions for tree bylaws have been removed from the *Forestry Act*; however bylaws enacted under the *Forestry Act* remain valid until they are repealed. The *Municipal Act* provides enhancements such as the option to charge violators per tree, require permits to cut and impose conditions on the cutting, allow by-law officers to order cutting to stop, as well as providing increased fines of up to $10,000 or $1,000 per tree. Some municipalities now use tickets for minor violations simplifying the enforcement of tree bylaws. Table 3h lists the number of tree-cutting bylaws in Ontario by year and the Act under which they were prepared. To learn more about tree bylaws, visit ontariowoodlot.com

Targeted Legislation The provincial interest in privately owned forests is also expressed for the Niagara Escarpment and Oak Ridges Moraine. Through enabling legislation, enhanced protection is provided under the *Niagara Escarpment Planning and Development Act* and the *Oak Ridges Conservation Act* and associated plans.

Additional protection was provided to forestland in the Golden Horseshoe in 2005. The *Greenbelt Act*, 2005 enables the creation of a Greenbelt Plan to protect about 729,000 hectares of environmentally sensitive and agricultural land in the Golden Horseshoe from urban development and sprawl. It includes and builds on about 324,000 hectares of land within the Niagara Escarpment Plan and the Oak Ridges Moraine Conservation Plan. The legislation authorizes the government to designate a Greenbelt Area and establish a Greenbelt Plan. It sets out the main elements and objectives for the Greenbelt, which are addressed in the Plan. It also requires planning decisions to conform to the Greenbelt Plan.

The MNR promotes natural area protection through conservation easements under the *Conservation Land Act*. Easements may be entered into with a qualified organization and landowners can provide limits on land use. Since the easement is registered

Table 3h Number of municipalities with tree cutting bylaws in Ontario

MNR Region	Legislation	2000	2001	2002	2003	2004
Southern	Forestry Act	23	24	24	19	19
	Municipal Act	15	16	16	22	27
Number of tree cutting bylaws in Ontario		**38**	**40**	**40**	**41**	**46**

on title, it binds all owners of the land over the easement's term. The land may be devalued in dollar terms by the easement, which can lower property taxes.

Ontario's regulatory framework also includes the *Professional Foresters Act*. The principal objective of this Act is to regulate the practice of professional forestry and to govern its members in accordance with the Act. While the *Professional Foresters Act* does not restrict a landowner's ability to cut trees on their property, it does affect practitioners of forestry whom they may hire for assistance.

The Incentive Component To achieve healthy ecosystems, incentives are offered to promote the level of stewardship achieved inside the legislative framework. At the provincial level, the incentive component includes: the Managed Forest Tax Incentive Program (MFTIP) and Ontario Stewardship. Other programs and opportunities complement this framework and are accessible through conservation authorities, environmentally based non-government associations and municipalities.

Managed Forest Tax Incentive Program The MFTIP was built on an earlier incentive program which was revised and re-introduced for the 1998 tax year to bring greater fairness to the property tax system by valuing forest land according to its current use. The program is designed to increase landowner awareness about forest stewardship. Participants in the program range from Essex County landowners looking after the fragmented natural landscape, to owners of shoreland in Muskoka, to large forest companies in northern Ontario contributing to the northern economy.

Landowners who apply and qualify for the program have their property classified under the Managed forests property class described in Ontario Regulation 282/98 of the *Assessment Act*. The eligible property is then taxed at 25 per cent of the residential tax rate established by the municipality. The minimum property size for the program is 4 hectares (9.88 acres). Landowners participating in the program are required to prepare a Managed Forest Plan for their property and have it approved by an individual designated by MNR as a Managed Forest Plan Approver.

The area covered by approved Managed Forest Plans indicates the program's success and, to some degree, the amount of private forests being sustainably managed. The goal is to ensure there is no long-term decline in the forest area included in the program. In 2004, there were 10,563 properties and 724,887 hectares of land receiving benefits under the MFTIP (Table 3i).

When reviewing MFTIP statistics, it must be acknowledged that in some parts of the province where property taxes are relatively low, the tax savings from

THE ENVIRONMENTAL BILL OF RIGHTS REVIEW OF THE MFTIP

On September 22, 2003, the Ministry of Natural Resources (MNR) received an application for review from the Environmental Commissioner's Office (ECO) requesting a review of the MFTIP under the Environmental Bill of Rights. The applicants alleged that "...the program policy is no longer achieving its stated objectives. We believe that the failure of this policy will lead to significant environmental harm".

The applicants further stated "The government's principle was that managed forests should be taxed at the same rate and assessed identically to farmlands (i.e., based on land productivity). The assessment of managed forests has now been redefined to be "highest end use" (i.e., a land's potential value for residential and commercial development and not its forest value); therefore, these forests lands are no longer valued on the same basis as farmlands".

On December 30, 2003, MNR informed the applicants that a review would be undertaken. The report was completed June 30, 2004. Recommendation #7 of the report was that the Ministry of Finance and MNR establish a stakeholder committee to implement the report's recommendations. On December 10, 2004, a MFTIP Implementation Committee was established to oversee the implementation of the report's recommendations. The committee included representatives from the Ontario Forestry Association, the Ontario Woodlot Association, Conservation Ontario, the Association of Municipalities of Ontario and municipalities. Staff from the Municipal Property Assessment Corporation also participated. In addition to implementing the report's recommendations, the committee was directed by the Ministers of Finance and Natural Resources to provide advice in developing a new assessment approach for managed forests. The committee provided recommendations to the government in May, 2005 on a new assessment approach for managed forests that was similar to the approach used for farms to be implemented for the 2006 tax year.

Table 3i Private forests managed under the Managed Forest Tax Incentive Program, by MNR region

	Forest Area Under Management (hectares)					Number of Properties				
MNR Region	**2000**	**2001**	**2002**	**2003**	**2004**	**2000**	**2001**	**2002**	**2003**	**2004**
Northeast Region	59,218	52,210	137,063	142,254	143,201	887	865	935	962	983
Northwest Region	181,083	180,206	180,430	181,398	182,045	105	115	118	121	135
Southern Region	386,102	379,157	391,364	396,964	399,641	8,364	8,309	8,846	9,302	9,445
Total	**626,403**	**611,575**	**708,857**	**720,616**	**724,887**	**9,356**	**9,289**	**9,899**	**10,385**	**10,563**

Reporting date - July 31st of the year specified

the MFTIP are not as great as in areas where property taxes are higher. Also in agricultural portions of the province, many woodlands receive preferential property tax treatment through the Farm Tax Policy. In these areas, landowners may be practicing good stewardship but may not be entered into the MFTIP.

Ontario Stewardship

Ontario Stewardship was initiated in 1995 by the MNR to encourage greater landowner involvement in stewardship activities. Ontario Stewardship helps people find information, expertise, and funding to ensure good management occurs on private land. The program's strength lies in its stewardship councils which are volunteer groups of landowners and land interest agencies. Each stewardship council works with a MNR stewardship co-ordinator. Many stewardship councils have representatives from forest interests and the forest industry. Each council is reflective of the landscape it serves.

The MNR provides funding to each council to be invested in community level projects. This is often combined with funds from other groups, government ministries and foundations. Volunteer hours are tracked and reported to show the total amount invested in private land stewardship. Examples of projects include workshops on woodlot and wetland management, stream restoration projects, endangered species conservation and community tree planting. Commencing 2004-05 and for 2005-06 the Ontario Stewardship opportunity fund was redirected to staffing priorities within the program.

For additional information on Ontario Stewardship, visit their website at: http://www.ontariostewardship.org.

ONTARIO STEWARDSHIP COUNCIL FOCUS: THE HURON STEWARDSHIP COUNCIL

Located in south-western Ontario's agricultural heartland, the Huron Stewardship Council has an interest in encouraging responsible management of woodlots on farms. In support of this interest a "Case Studies" project was undertaken to investigate if economic returns from woodlots can compare favourably with those from agriculture. A number of case studies were developed, profiling woodland owners who have not only demonstrated long-term stewardship of their forests, but have also documented financial returns over the years. Returns from these managed forests have been compared to the income from agricultural crops on comparable land over the same period. To view the interesting results from these case studies, follow the "Case Studies" link at www.huronstewardship.on.ca.

The project was initiated by the Huron Stewardship Council, Ontario Ministry of Natural Resources Guelph District and Maitland Watershed Partnerships, with help from The George Morris Centre and many other partners, including the landowners and Ontario Stewardship.

The County Stewardship Council working with partners towards:*"A healthy natural landscape that is valued by the Huron County community, managed sustainably by landowners and other partners and utilized in a balanced way for multiple benefits to the Huron community (e.g. economic, human health, recreation, etc.)."* For more information, visit http://www.ontariostewardship. org

Table 3j Summary of Ontario Stewardship accomplishments for 2004-05

Reporting Criteria	Measure
Council summary	
Number of stewardship councils	39
Number of council members (12/council)	478
MNR contribution ($10,000/council)	$390,000
Opportunity fund ($)	$0*
Project summary (primary program area)	
Number of fish and wildlife projects	201
Number of forestry projects	197
Number of "other" projects	127
Total number of projects	525
Partner contributions to	
Number of volunteers	18,557
Number of volunteer hours	236,024
In-kind partner effort ($)	$7,666,034
Direct partner contributions ($)	$9,153,851
Total partner contributions (direct/indirect $)	**$16,819,835**

* Opportunity fund redirected to staffing priorities within Ontario Stewardship

Other Private Land Initiatives

The MNR supports other initiatives that provide assistance to Ontario's private land owners including:

- An Extension Note series which provides information in an easy-to-understand format on topics related to land, water, wildlife, trees and property management. The notes are on the Ontario Forests website (http:/ ontariosforests.mnr.gov.on.ca). Other publications, of a more technical nature, are also available to landowners.
- The Eastern Habitat Joint Venture Program, where the MNR and partners actively conserve important wetland and upland habitats for the benefit of waterfowl, other wildlife and the public. Through this program, non-government partners offer technical and financial assistance to landowners for conservation projects.
- The Conservation Land Tax Incentive Program offers a reduction in property taxes to landowners agreeing to protect a natural heritage feature identified by the MNR on their property (e.g., provincially significant woodlands). For 2004, the program had approximately 15,000 properties participating, thereby conserving some of Ontario's most significant natural heritage features.

Forest Access Roads

In 2004-05 most forest access roads on Crown land were planned, constructed, and paid for by the forest industry. The FMP for each management unit describes the location, construction, maintenance, and management of access roads that exist, or are planned for construction. These roads are essential for performing forest management activities. Once established, forest access roads may provide public access to provincial Crown land for tourism, outdoor recreation, mining, and other activities.

This chapter provides information on the construction of primary and secondary forest access roads. It describes road maintenance activities, including grading, snow ploughing, re-alignments, flood repairs, bridge repairs, and any other activity necessary to maintain existing roads. This chapter also reports on controlling access to roads, implementation of abandonment measures, and funding.

Road Construction and Maintenance

Figure 4a illustrates provincial road construction for a five year period from 2000 through 2005. Total primary and secondary[6] road construction amounted to 383 kilometres in the current year. Figure 4b illustrates total provincial road maintenance for a five year period from 2000 through 2005. Road maintenance efforts decreased significantly (currently at 11,990 km) in comparison to the previous years.

In 2004-05 the Forest Access Road Program, funded by the MNR and the Ministry of Northern Development and Mines, invested $4.92 million in the reconstruction and maintenance of forest access roads in Ontario. Most of the road work funded by the two ministries serves several purposes, including public access and forest management.

Road Access Control, Decommissioning and Abandonment

For reasons of public safety and/or resource management, forest access roads may be closed to certain uses on a temporary, seasonal, or permanent basis. Methods used to control access can generally be classified into two categories: erecting signs to advise the public of the restriction (referred to as signage); or, installing gates or using other physical means such as ditching (referred to as gated or physical barrier). Road access control and abandonment must be planned in advance of construction, and documented in the FMP for each management unit. These activities must also be reported in the management unit annual report.

[6] During 2004-2005 changes in road definitions and terminology began to be applied. Use of the new terminology does not yet appear in annual reports, however for planning purposes the term 'branch roads' began to replace 'secondary roads', and 'operational roads' began to replace 'tertiary roads'.

Figure 4a Road construction by road class and MNR region

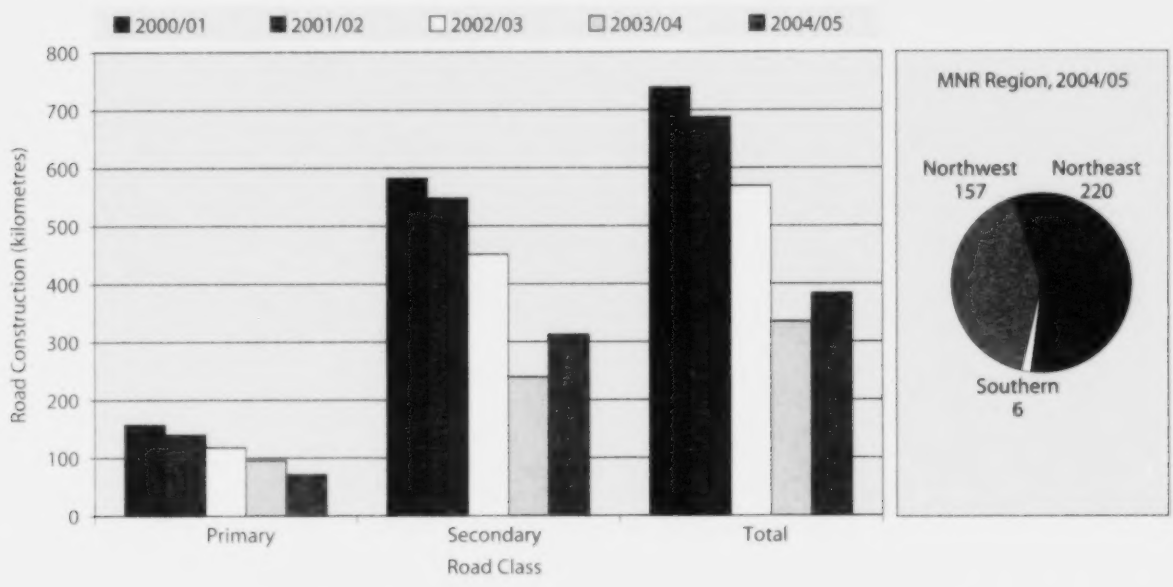
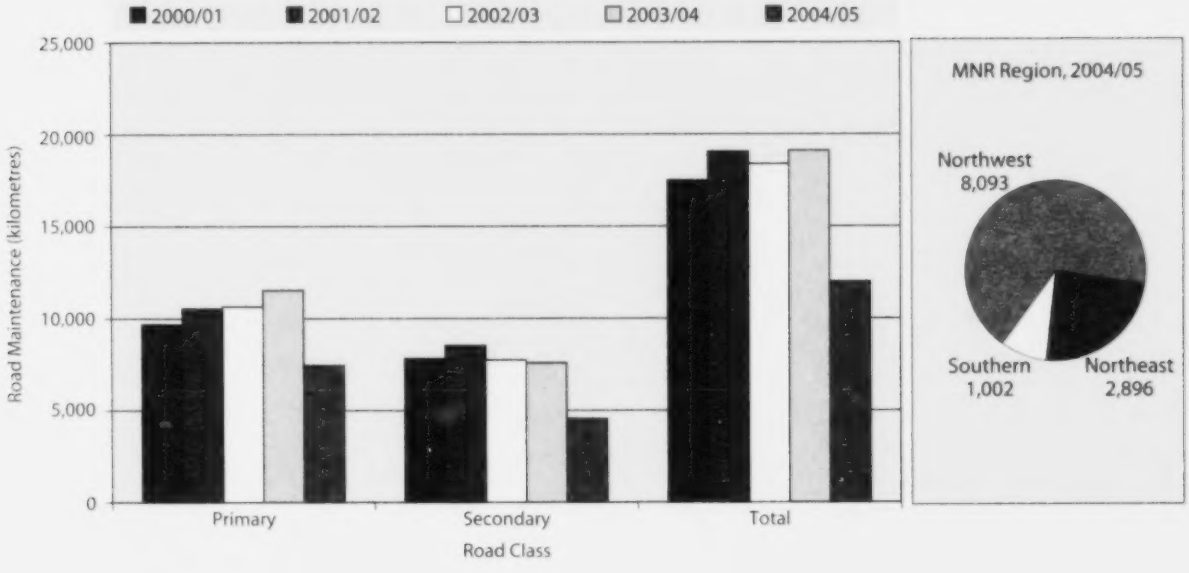


Figure 4b Road maintenance by road class and MNR region



In the current year spatial data has been used to accurately identify the location of road access controls and the length of road segments which have been abandoned. This new approach makes comparisons to previous years where tabular data and assumptions were used, problematic. For this reason trend data is not presented.

In 2004-05 access controls were established on 305 kilometres of road, and 69 kilometres of road were abandoned. The majority of the abandoned roads (60 km) were located in the Northeast Region.

PROTOCOL FOR THE REVIEW OF WATER CROSSINGS

Condition 25(b) of the June 2003 MNR-71 Declaration Order regarding MNR's Class Environmental Assessment for Approval for Forest management on Crown Lands in Ontario stated that:

"...MNR, in consultation with the forest industry and other government agencies shall develop a proposal for efficiently conducting reviews of water crossings as required under the Federal *Fisheries Act*..."

To address this condition, a working group comprised of MNR, Federal Department of Fisheries and Oceans (DFO), and forest industry representatives was created. The working group considered the existing policy documents which included: *A Protocol Detailing the Fish Habitat Referral Process in Ontario* (2000), and *Fish Habitat in Ontario: Compliance Protocol, Federal and Provincial Roles and Responsibilities* (2004). The working group produced a document called the *Protocol for the Review of Water Crossings Proposed through the Forest Management Planning Process*, which is a document that sets forth a process by which water crossing proposals will be reviewed by the MNR. The document:

- Clearly defines the roles and responsibilities of the MNR, the forest industry and DFO;
- Provides a consistent and systematic risk-based approach for reviews;
- Focuses staff effort on those proposed water crossings with the greatest potential risk, and
- Establishes a foundation for documenting how decisions are made.

DFO and MNR delivered training on the implementation of the protocol to over 350 people from MNR, the forest industry and DFO. The parties will continue to work together on the implementation of the protocol to ensure its future success

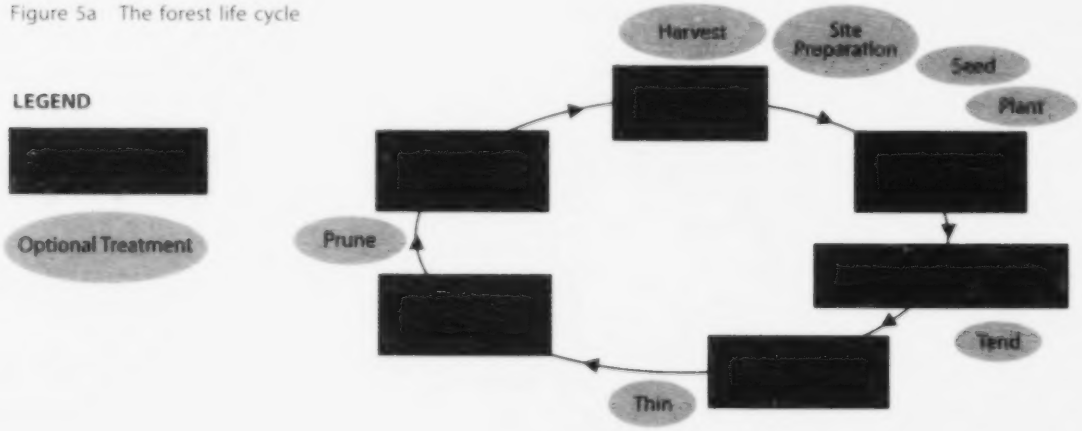
Chapter 5
Forest Disturbance and Harvest

Natural disturbances such as insects, diseases, severe weather events and forest fires occur throughout the life cycle of the forest, as illustrated in Figure 5a. Forest disturbances (except for diseases) are measured both by area (hectares) and volume (cubic metres) of trees killed, damaged, or harvested. Losses to tree diseases are normally chronic, and are estimated by calculating an annual average volume loss for all chronic diseases. Area affected is not recorded for chronic diseases.

All estimates of disturbance area, both for the province and for the Area of the Undertaking (AOU), encompass all forest lands, including Crown forests, federal and private forest lands, and federal and provincial parks. Estimates for AOU disturbance volume, however, are based on Crown production forest lands only.

Forest inventory descriptions are changed when stands are impacted by disturbance. However, the degree of disturbance impact required before the inventory description is changed is a subjective decision. The most significant disturbances are reported in the fall of the year following a disturbance. *In previous reports disturbances were reported for the previous fiscal year. Reporting was delayed to allow time to completely map and inventory all disturbances that occurred during a given year. Improvements in the reporting methodology now permit current reporting of disturbances. In this report, disturbance data is reported for both 2003-04 and 2004-05.*

Figure 5a The forest life cycle



Chapter 5
Forest Disturbance and Harvest

Natural Disturbances

Natural disturbances include fire disturbances, and damage from insects, disease, and severe weather conditions. The intensity of these disturbances varies annually.

Forest Fires

The MNR records the area and volume disturbed by forest fires across all the forested area of Ontario. The number and size of forest fires varies dramatically year to year, depending on the weather. This variability is particularly noted in Table 5a, where the last five years of provincial fire disturbance are shown. Fire activity in fiscal year 2003-04 was high with 318,707 ha burned throughout the province, resulting in an estimated volume loss of almost 4.7 million cubic meters within the AOU. In stark contrast, fire activity was unusually low in fiscal 2004-05 with only 1,799 hectares burned provincially with a volume lost in the AOU of just under 6,000 cubic meters. Depending on the severity of the damage to trees from fire, it is often possible to conduct salvage activities in burned areas to harvest dead or damaged trees. These operations are reported as harvesting, and discussed later in this chapter.

Insects, Disease, Severe Weather

Estimates of area affected and wood volumes lost from 2000-01 through 2004-05 due to insects, disease, and severe weather are based on studies completed by the Forest Health Monitoring partnership between the Canadian Forest Service and the MNR. Depending on the severity of damage to trees from these disturbances, it is often possible to conduct salvage operations in disturbed areas to harvest timber and reduce economic losses and the threat of forest fires.

Insect Damage

The damaged area and volume loss caused by the most destructive insects are based on estimates of forested areas where 30 percent or more of the foliage was removed. Usually, a number of years of repeated defoliation is required to kill a tree. This varies for each pest, the tree species being attacked, and other factors. Forested areas may be defoliated by more than one insect. Area reported as defoliated may include different degrees of severity.

Area The total area infested by forest insects where growth loss and/or tree mortality has occurred for the last 5 years is presented in Tables 5a and 5b. Insect infestation area within the province where growth loss occurred was at the lowest levels in the recent past for both fiscal year 2003–04 and 2004-05.

Volume Insects causing significant damage to Ontario's forests include the spruce budworm, the jack pine budworm, the forest tent caterpillar, the gypsy moth, and a number of insects that chronically attack poplar and white birch. The estimated volumes lost in the AOU between 2000-01 and 2004-05, due to growth losses and mortality caused by damage from these insects, is reported in Tables 5a and 5b. Poplar/Birch Complex, and Spruce budworm continue to account for the majority of the mortality that occurs. Much of the mortality experienced in 2004-05 is generally attributable to an outbreak of Poplar/Birch Complex in the Hearst-Timmins area. This outbreak had been ongoing for some time (several years of repeated growth loss) with a large area of trees finally succumbing to the complex in 2004-05. Forest tent caterpillar continues to be responsible for the majority of growth losses.

Diseases

The change in area and volume in a forest stand that results from natural mortality every year is not usually significant enough to be recorded for inventory update purposes. For example, chronic diseases such as root rot may kill only a few trees scattered throughout a forest stand. Therefore, no area loss is recorded for most diseases. However, an estimate of the volume of wood in the dead trees and volume of growth loss in the remaining live trees is made. Volume estimates of the effects of chronic disease consist of growth and mortality losses caused by rot, stem decay, and foliage dieback.

The estimated losses to disease for the last 5 years, have been relatively stable, at approximately 10-12 million cubic metres lost annually, see Table 5c. Most of the losses recorded are in the form of tree mortal-

Table 5a Estimated Losses in Area and Wood Volume Due to Mortality Caused by Natural Disturbances

Area in hectares, mortality volume in cubic metres, gross total volume (GTV)

	Average 1990-1999	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005
Abiotic Damage - Area and Volume Loss - Mortality						
Fire						
Provincal Area	230,644	6,639	10,242	177,497	318,707	1,799
Crown AOU Area	40,230	1,128	1,090	21,340	65,199	640
Crown AOU Volume	4,386,973	10,994	109,107	3,026,598	4,699,806	5,974
Blowdown						
Provincal Area	40,924	2,293	3,049	9,563	2,159	107
Crown AOU Area	20,247	1,199	442	7,447	732	69
Crown AOU Volume	3,543,967	286,022	97,824	17,451	5,431	–
Weather Damage						
Provincal Area	127,802	—	—	2,576,469	1,138	173,015
Crown AOU Area	65,144	—	—	1,950,037	1,066	152,700
Crown AOU Volume	19,223	—	—	10,553,412	7,065	962,082
Drought						
Provincal Area	732,806	—	5,795,783	70,681	—	—
Crown AOU Area	105,504	—	2,972,061	57,576	—	—
Crown AOU Volume	442,168	—	6,734,571	210,080	—	—
Biotic Damage - Forest Insects - Area and Volume Loss - Mortality						
Spruce Budworm						
Provincal Area	6,436,293	8,747,448	—	2,312	—	13,848
Crown AOU Area	3,167,313	4,591,156	—	—	—	5,820
Crown AOU Volume	7,073,191	4,198,471	—	—	—	3,949
Jack Pine Budworm						
Provincal Area	43,022	—	—	—	4,338	856
Crown AOU Area	27,294	—	—	—	2,942	23
Crown AOU Volume	4,583	—	—	—	1,378	246
Gypsy Moth						
Provincal Area	50,724	18,791	7,367	145,164	47,617	177
Crown AOU Area	27,178	237	5,369	42,987	6,564	1
Crown AOU Volume	4,701	—	1,522	41,422	3,669	—
Poplar/Birch Complex						
Provincal Area	—	—	—	—	—	336,731
Crown AOU Area	—	—	—	—	—	244,132
Crown AOU Volume	—	—	—	—	—	1,139,991
Other Insects						
Provincal Area	—	—	—	—	1,781	5,039
Crown AOU Area	—	—	—	—	342	520
Crown AOU Volume	—	—	—	—	—	2,560
Total - Biotic and Abiotic Damage - Area and Volume Loss						
Provincal Area	**7,662,217**	**8,775,171**	**5,816,441**	**2,981,685**	**375,739**	**531,571**
Crown AOU Area	**3,452,910**	**4,593,720**	**2,978,963**	**2,079,387**	**76,846**	**403,905**
Crown AOU Volume	**15,474,806**	**4,495,486**	**6,943,025**	**13,848,963**	**4,717,349**	**2,114,802**

ity. Mortality was somewhat higher in 2004-05 when compared to the previous year. Volume losses in both years were consistent with the long term average with losses totalling 10.6 million cubic meters in 2003-04 and 11.1 million cubic meters in 2004-05.

Severe Weather

Windstorm damage (commonly referred to as "blowdown"), drought, and cold weather damage (ice/snow/severe cold) are the most common weather related occurrences causing significant tree mortality and volume losses. Windstorms occur periodically, but must affect a sizeable area to be recorded. The estimates for windstorm damage are reported by individual management units, and are not part of the estimates provided by the Forest Health Monitoring partnership.

The area reported as being damaged by severe weather between 2000-01 and 2004-05 is shown in tables 5a and 5 b. The total AOU area damaged in

Table 5b Estimated Growth Lost in Area and Wood Volume Due to Natural Disturbances

Area in hectares, mortality volume in cubic metres, current annual increment (CAI)

	Average 1990-1999	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005
Abiotic Damage - Area and Volume - Growth Loss						
Weather Damage						
Provincal Area	84,745	—	—	—	—	173,015
Crown AOU Area	37,110	—	—	—	—	152,700
Crown AOU Volume	4,719	—	—	—	—	—
Drought						
Provincal Area	732,806	109,097	5,795,783	70,681	—	—
Crown AOU Area	388,438	68,961	2,972,061	57,576	—	—
Crown AOU Volume	69,834	62,593	855,106	28,737	—	—
Biotic Damage - Forest Insects - Area and Volume - Growth Loss						
Spruce Budworm						
Provincal Area	4,661,768	114,958	169,881	131,122	229,754	279,448
Crown AOU Area	2,420,341	81,286	109,068	58,479	132,809	156,943
Crown AOU Volume	491,511	16,987	99,760	305,277	457,200	10,422
Jack Pine Budworm						
Provincal Area	206,774	—	—	—	—	856
Crown AOU Area	120,548	—	—	—	—	23
Crown AOU Volume	19,066	—	—	—	—	40
Forest Tent Caterpillar						
Provincial Area	4,900,579	7,297,233	13,836,663	7,505,625	4,147,979	1,272,413
Crown AOU Area	2,478,837	4,047,515	7,161,468	5,432,506	2,970,439	829,959
Crown AOU Volume	969,830	1,639,076	2,333,414	1,604,942	993,256	272,905
Gypsy Moth						
Provincal Area	50,724	18,791	7,367	145,164	47,617	177
Crown AOU Area	27,178	237	5,369	42,987	6,564	1
Crown AOU Volume	1,963	—	203	597	24	—
Poplar/Birch Complex						
Provincal Area	3,775,975	16,210	9,329	277,621	17,364	7,814
Crown AOU Area	2,106,667	9,677	4,474	205,094	8,116	4,250
Crown AOU Volume	233,361	15,860	3,443	13,143	811	415
Other Insects						
Provincal Area	4,156	23,515	4,733	44,025	121,490	12,174
Crown AOU Area	63	4,938	14	1,707	1,555	2,173
Crown AOU Volume	28	—	—	—	—	2
Total - Biotic and Abiotic Damage - Area and Volume Loss						
Provincal Area	**14,417,528**	**7,579,805**	**19,823,757**	**8,174,238**	**4,564,203**	**1,745,896**
Crown AOU Area	**7,579,183**	**4,212,615**	**10,252,455**	**5,798,349**	**3,119,483**	**1,146,048**
Crown AOU Volume	**1,790313**	**1,734,515**	**3,291,926**	**1,952,694**	**1,451,291**	**283,784**

Table 5c - Estimated Wood Volume Lost to Diseases

Area in hectares, mortality volume in cubic metres (GTV), growth loss in cubic metres (CAI)

	Average 1990-1999	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005
Diseases - Mortality - Crown AOU Volume						
Decay	4,792,277	4,736,537	4,668,195	4,316,050	4,054,071	4,665,586
Root Rot	3,770,635	4,071,363	3,865,660	3,286,164	3,266,784	3,005,507
Dieback	1,477,985	1,487,812	1,436,508	1,442,661	1,315,075	1,525,313
Other Diseases	171,153	—	—	—	—	6,258
Total	**10,212,050**	**10,295,713**	**9,970,363**	**9,044,875**	**8,635,930**	**9,202,664**
Diseases - Growth Loss - Crown AOU Volume						
Root Rot	282,327	222,287	210,201	210,201	209,333	208,390
Hypoxylon	1,873,916	1,949,315	1,885,558	1,903,250	1,643,938	1,600,140
Aspen Decline	4,862	18,528	79,654	104,359	128,435	43,164
Total	**2,161,105**	**2,190,130**	**2,175,412**	**2,217,810**	**1,981,706**	**1,851,693**

MEASURING FOREST PEST AREAS AND VOLUME CALCULATIONS

Each year, Ontario's forests are affected by many types of natural disturbances, ranging from wildfire and severe weather, to insects and a wide variety of diseases. In cooperation with the Canadian Forest Service (CFS), the Ministry of Natural Resources (MNR) conducts extensive surveys of all types of forest disturbances. Detailed mapping of affected area is conducted each field season, based on the size and severity of each disturbance. Most reconnaissance and mapping is done using aerial surveys, with ground checks to collect samples and data.

There are two main groups of natural forest disturbances measured in Ontario, abiotic and biotic. Abiotic disturbances are those caused by non-living factors, including wildfire, drought, and severe weather such as wind, snow or hail. Biotic disturbances are those caused by living factors such as insects (forest tent caterpillars, gypsy moths, spruce budworm), or diseases (hypoxylon, root rot, or Stillwell syndrome).

Many of the insects and diseases that occur in Ontario's forests do not actually kill the trees they infest, but simply reduce the amount of growth that occurs in a spring/summer season. For example, a forest tent caterpillar infestation can reduce aspen growth by 75% in a season, and white birch by 40%. This growth loss is recorded as current annual increment volume (CAI) loss. Many years of repeated defoliation can eventually lead to tree mortality, and this is recorded differently, as gross total volume (GTV) of wood lost. Most abiotic disturbances like fire or blowdown cause major forest damage, and usually end up with significant tree mortality within the area of the disturbance. Each disturbance type is studied and growth loss or mortality factors are developed based on these field samples. Chronic tree diseases such as hypoxylon or root rot are not measured in area, as they are assumed to occur in all trees to some extent, so estimates by tree species and age are calculated for the entire AOU, and reported for Crown forests.

Once field surveying is complete, digitized maps are overlaid on top of forest resources inventory (FRI) maps within the Area of the Undertaking (AOU), so growth loss and mortality volumes can be calculated for Crown forests. Total provincial areas are also recorded, as many disturbances occur in the northern boreal forest, as well as southern Ontario, but volumes are not calculated for these areas.

The MNR's Annual Report on Forest Management gives a 5 year provincial level snapshot of:

- total provincial area affected
- Crown forest area within the AOU
- estimated growth loss for Crown forests within the AOU (CAI)
- estimated mortality loss for Crown forests within the AOU (GTV)

Annual maps showing major infestations are now part of the Annual Report Supplemental CD, as well as the MNRs website (www.mnr.gov.on.ca). More detailed area and volume numbers are available from the Forest Evaluation and Standards Section of the MNR

2003-04 was less than 1,800 hectares, leading to mortality of approximately 12,500 cubic meters. In contrast, the total AOU area damaged in 2004-05 was approximately 153,000 hectares, leading to mortality of over 950,000 cubic meters.

Forest Harvest

The level of allowable harvest in a management unit is determined through the forest management planning process. The MNR requires that the allowable harvest for a management unit be set at a level that will sustain a healthy forest over time. Harvesting in each management unit is controlled and monitored according to the approved Forest Management Plan. The Forest Management Plan specifies both the allowable harvest area and the associated volumes. However, control of the allowable harvest is by area.

Natural Disturbance Pattern Emulation

The fundamental principle in emulating natural disturbance is to harvest and regenerate Ontario's forests in more natural patterns, ensuring that the needs of wildlife species are met and healthy diverse ecosystems with their many benefits are passed on to future generations. Under the CFSA and subsequently with the publication of the *Forest Management Guide for Natural Disturbance Pattern Emulation* (NDPE Guide) in 2001, Ontario has been changing its forest practices so that forest biodiversity and natural processes are more proactively maintained. This is accomplished, in part, by emulating as closely as possible the landscape patterns (i.e. variation in size and shape) produced by forest fires, most notably during the implementation of the clearcut silvicultural system in the boreal forest.

While forest harvesting can never exactly duplicate natural disturbances in the forest, the NDPE Guide promotes timber harvesting practices that emulate the natural range and pattern of fire disturbances - both small and large. This variation in harvest pattern creates desirable habitat for wildlife species. Smaller disturbances favour the creation of habitat for species such as moose, black bear and ruffed grouse, because this size of disturbance creates a lot of "edge" (where different forest types, features, or age classes come together). Larger disturbances, over time, create habitat for species which prefer large, uniform forests, such as the American marten, the woodland caribou, and the great grey owl. Wildlife species have evolved in forest patterns that have largely been shaped by wildfire. Therefore the widest possible range of wildlife species will benefit by emulating the broadest range of natural disturbance patterns.

Silvicultural Systems Used in Ontario

Harvesting in Ontario is one of a series of actions that, when combined with other actions of forest renewal and maintenance (e.g., tending, protection, etc.) represent a silvicultural system. These systems are classified according to the method of harvesting. Ontario uses three silvicultural systems: selection, shelterwood, and clearcut.

Selection Silvicultural System

Mature, unhealthy or undesirable trees are continuously removed individually or in small groups over an entire area, throughout the forest life cycle. This method produces stands with trees of different ages and is referred to as uneven-aged management.

Shelterwood Silvicultural System

Mature trees are harvested in a series of two or more cuts to encourage natural regeneration and growth under or next to the residual trees. This is done by cutting trees uniformly over the stand area or in groups or narrow strips. Stands with trees approximately the same age are produced with this system.

Clearcut Silvicultural System

The volume available from areas harvested under this system is usually harvested in one operation. Individual trees within the harvest area and/or parts of forest stands are retained for silvicultural reasons (e.g., seed trees) or to provide protection for forest values (e.g., marten habitat and cavity dwelling birds). Regeneration methods used can be natural, assisted (e.g., planting) or a combination of both methods. This method produces stands where most of the trees

are at about the same age, and is referred to as evenaged management.

Average and Maximum Size of Clearcuts The CFSA requires "using forest practices that within the limits of silvicultural requirements, emulate natural disturbances and landscape patterns while minimizing adverse effects on plant life, animal life, water, soil, air, and social and economic values, including recreational values and heritage values". The Timber Class EA approval provides for a range of clearcut sizes, not to exceed 260 hectares, unless supported by sound biological or silvicultural reasons. It also recognizes that a range of clearcut sizes is required. Efforts to provide a range of disturbance sizes have resulted in some planned clearcuts being larger than 260 hectares, with appropriate rationale provided in FMPs.

Cut patterns, sizes, and distribution are developed based on the applicable forest management guides in accordance with natural conditions, historical disturbance and landscape patterns, forest types, silvicultural characteristics of tree species, and fish and wildlife habitat needs. When appropriate, forest management operations within cut blocks are further altered or prohibited to protect identified site-specific forest values by implementing measures (e.g., reserves and harvest restrictions) specified in the guides.

The NDPE Guide provides direction to forest managers on designing harvest areas to more closely resemble natural disturbances by leaving more standing trees, as individuals and as peninsular and insular patches, scattered throughout irregularly-shaped harvest areas. It also contains guidance for measuring clearcut size. This Guide will be implemented on individual management units over five years as new FMPs are prepared, and began with plans approved for implementation in 2003.

In the past, area statistics for average and maximum size clearcuts often referred to the area cut in a particular year, without consideration of harvests in previous years or nearby clearcuts. The use of a consistent method of measuring and reporting clearcuts, including consideration of contiguous harvest from year to year, will improve as the NDPE Guide is implemented. Meanwhile, until clearcuts are measured and reported consistently throughout the province following the direction in the NDPE Guide, comparison of the average and maximum clearcut sizes between management units may not be valid. Condition 32 (b) of the EA Declaration Order requires a summary of the size and frequency parameters of clearcuts.

Boreal Forest Other key forest management guides used to design clearcut sizes and patterns within the Boreal Forest include: *Timber Management Guidelines for the Provision of Moose Habitat* and *Forest Management Guidelines for the Conservation of Woodland Caribou : A Landscape Approach*.

The provision of moose habitat includes direction for range management and specific stewardship for values such as aquatic feeding areas. In northwestern Ontario, in locations where significant woodland caribou populations occur, application of the woodland caribou guide takes precedence over application of the moose habitat guide for determination of clearcut size.

In 2004-05, 39 management units within the Boreal Forest reported current average clearcut sizes ranging from 4 to 701 hectares. Maximum clearcut sizes ranged from 105 to 4,199 hectares. There were 4,980 clearcuts reported in 2004-05, 182 of which had current harvest areas larger than 260 hectares.

As described above, some clearcuts are located adjacent to areas which had recently been harvested. When this occurs, the result is essentially an addition to an existing clearcut. This effect is considered in planning and reporting following the direction of NDPE Guide. The clearcut statistics, when adjacent cutblocks are considered is as follows: average clearcut sizes ranged from 49 to 2,825 hectares. Maximum clearcut sizes reported ranged from 206 to 28,761 hectares. There were 4,980 clearcuts reported in 2004-05, 775 of these (16%) were larger than 260 hectares.

Great Lakes-St. Lawrence Forest In the Great Lakes-St. Lawrence forest, the primary stand-replacing natural disturbance agents have been a combination of wind and fire events. Through an ecosystem management approach to landscape-level manage-

ment, forest managers attempt to address the habitat requirements of many wildlife species. The specific habitat requirements of selected species are also considered. Some species, such as pileated woodpecker, are area sensitive and need large blocks of forest. Other species such as white-tailed deer prefer small patches and an abundance of edge habitat. Some species, such as moose, require a complex mosaic of forest types and ages. To provide for a diversity of habitat needs when planning for forest harvest, a variety of harvest area sizes must be employed.

In 2004-05, eight management units within the Great Lakes-St. Lawrence Forest reported average clearcut sizes ranged from 1 to 85 hectares. Maximum clearcut sizes ranged from 3 to 282 hectares. There were 876 clearcuts reported in 2004-05, of which 2 clearcuts had current harvest areas larger than 260 hectares.

In the Great Lakes St-Lawrence forest clearcutting is not used as frequently as it is in the Boreal forest. However, clearcuts are sometimes created that are adjacent to other recent clearcuts. When adjacency is taken into account, the clearcut statistics are as follows: average clearcut sizes ranged from 1 to 85 hectares. Maximum clearcut sizes ranged from 3 to 1,139 hectares. Of the 876 clearcuts reported during the year, 24 of these (3%) had areas in excess of 260 hectares.

Harvest Area

The area harvested annually using the three silvicultural systems, from 2000-01 through 2004-05, is shown in Figure 5b. Total area harvested using the clearcut system increased slightly in 2004-05 to 193,189 hectares, which is within the normal range of variation over the five year period. Area harvested using both the shelterwood and selection systems increased slightly to 15,636 hectares and 13,909 hectares respectively.

Figure 5c illustrates the total provincial area harvested from 2000-01 through 2004-05, and includes a summary by MNR region for 2004-05. The total harvest area increased slightly during 2004-05, to 222,734 hectares, which is within the normal range of variation over the five year period.

The pattern of harvest across the province remained the same as in previous years with the Northeast Region having the largest regional harvest area (50%), while the Northwest Region was second (41%). The Southern Region, which has a much smaller forest area, had the lowest regional harvest at 9% of the total provincial harvest.

Figure 5d shows the total harvest area from 2000-01 to 2004-05 compared to the area disturbed by natural causes for the same period. In 2004-05 the area harvested was approximately 1/2 of the area disturbed naturally[7]. The volume lost (mortality) to all natural causes is estimated at 2,114,802 million cubic meters in the AOU.

Figure 5b Area harvested by silvicultural system

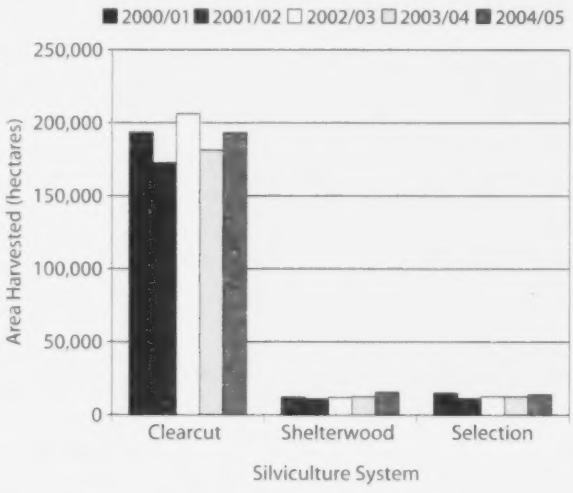
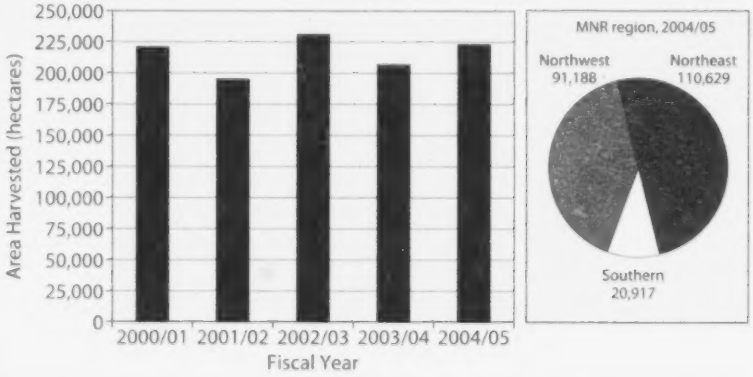


Figure 5c Area harvested by fiscal year and MNR region during 2004-05



When large areas are burned by fire or destroyed by windthrow or insects, forest companies often harvest some of the remaining dead and damaged wood. This salvage harvest is usually carried out soon after the disturbance. In 2004-05 there was a decrease in the amount of salvage harvest. A total of 13,504 hectares were salvaged. The decrease in salvage is reflective of the unusually low number of fires which occurred in 2004-05.

Harvest Volume

Total provincial softwood and hardwood volumes harvested from 2000-2001 through 2004-05 are illustrated in Figure 5e. In 2004-05, the total provincial harvest volume was approximately 22.9 million cubic metres, which is within the range of normal variation of harvest volumes over the past 5 years.

Figure 5d Forest area disturbed by harvest and natural causes within the AOU

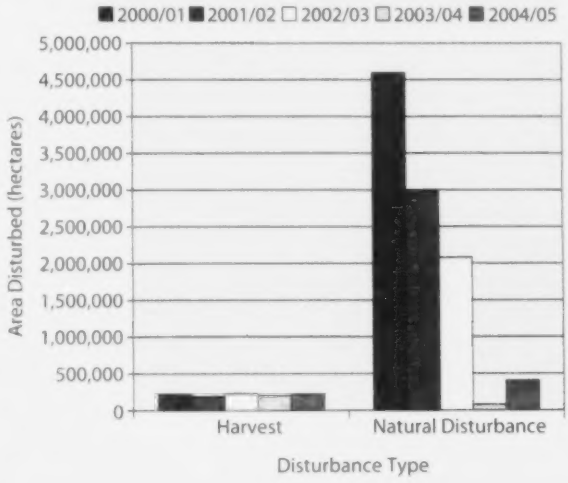
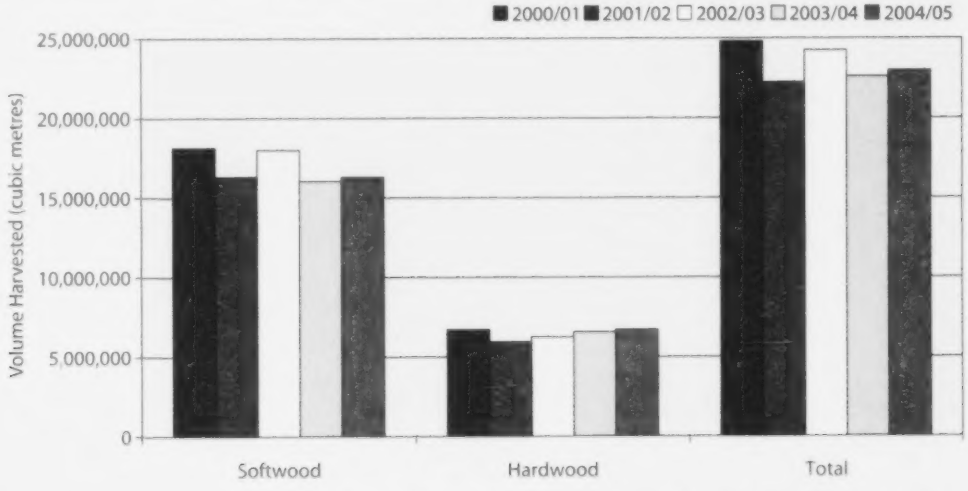


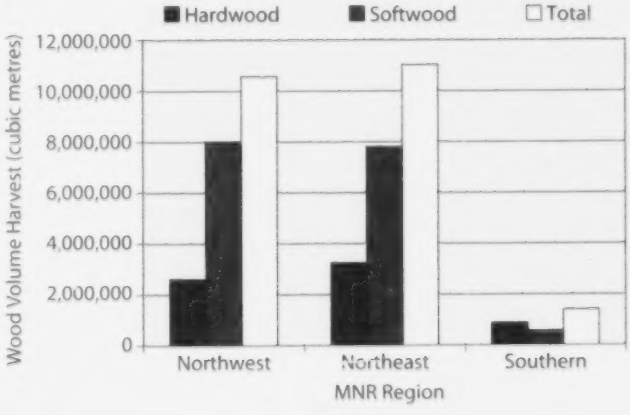
Figure 5e Hardwood and softwood volumes harvested on Crown land



The volume of wood harvested per hectare fluctuates due to changes in the types of stands harvested, delayed delivery of wood stored in the bush to mills, increased utilization, and/or changing market conditions. In 2004-05 the average volume harvested was 103.2 cubic metres per hectare.

Wood volumes harvested in 2004-05 in the MNR's three regions are shown in Figure 5f.

Figure 5f Wood volume harvested by MNR region and species group, 2004-05



[7] Natural disturbances include fire, blowdown, weather damage, drought, insects and diseases as described in Table 5a. This comparison is different from previous reports where a comparison between area harvested and the area burned was reported.

The 2004-05 regional harvest volumes were: 10.6 million cubic metres, or 46 percent of the total harvest volume in the Northwest Region; 11.0 million cubic metres, or 48 percent of the total harvest volume in the Northeast Region; and, 1.4 million cubic metres, or 6 percent of the total harvest volume in Southern Region. Softwood tree species accounted for 71 percent of the total harvest volume, with a harvest of approximately 16 million cubic metres. The hardwood harvest volume of approximately 6.7 million cubic metres accounts for 29 percent of the provincial harvest total.

The harvest volumes by individual species for 2000-01 through 2004-05 are shown in Table 5d. Fluctuations in the harvest volumes of individual tree species from year to year are largely due to changes in market demand, and variations in the species encountered on the areas harvested.

Table 5d Harvest volume by species (cubic metres)

Softwood Species	**2000/01**	**2001/02**	**2002/03**	**2003/04**	**2004/05**
White Pine	449,083	402,704	486,547	463,843	259,829
Red Pine	227,808	237,374	208,970	243,345	259,829
Jack Pine	6,322,585	5,733,221	6,255,812	5,727,440	5,051,906
Spruce	10,356,660	9,327,686	10,330,575	9,063,207	9,767,745
Hemlock	26,511	21,430	32,482	23,786	29,124
Balsam Fir	670,184	527,790	621,238	467,920	483,324
Cedar	26,783	16,877	26,424	17,432	41,618
Larch	28,054	30,114	34,483	31,768	39,241
Other Softwoods	97	0	0	7	554
Total Softwoods	**18,107,765**	**16,297,195**	**17,996,530**	**16,038,747**	**16,287,573**
Hardwood Species	**2000/01**	**2001/02**	**2002/03**	**2003/04**	**2004/05**
Maple	590,307	471,533	584,766	628,126	655,712
Yellow Birch	47,859	38,893	45,915	49,783	63,089
White Birch	409,062	390,313	457,035	662,589	684,200
Oak	38,968	29,365	36,028	39,560	39,942
Beech	36,132	26,981	38,821	41,385	43,788
Poplar	5,540,861	4,946,318	5,056,319	5,105,371	5,179,238
Basswood	18,639	11,745	11,888	13,903	12,786
Ash	5,583	3,463	3,516	3,822	5,068
Other Hardwoods*	1,588	1,088	2,135	2,104	3,638
Total Hardwoods	**6,689,000**	**5,919,699**	**6,236,424**	**6,546,644**	**6,687,461**
Provincial Total	**24,796,764**	**22,216,894**	**24,232,954**	**22,585,391**	**22,975,034**

** The volumes for black cherry, ironwood, butternut, and elm are too small to be shown individually. They have been added together under Other Hardwoods.*

Forest Renewal and Maintenance

Under the terms of the CFSA, forest managers are responsible for fully renewing the forests where they operate. Sustainable Forest Licence (SFL) holders must ensure that areas harvested are renewed to the silvicultural standards established in FMPs, to ensure the long-term health of Crown forests. Long-term forest health is also promoted by forest maintenance operations. These operations include tending carried out to improve the survival, growth, or quality of a regenerating forest, and protection operations carried out to manage or prevent the damage caused by forest insects and diseases.

Forest Renewal

Activities needed to ensure the successful regeneration of all harvested areas are specified in all approved FMPs in Ontario. Crown forests are renewed by both assisted and natural regeneration techniques, and these activities are reported annually.

Planting and seeding are the two most common types of assisted regeneration. Planting includes planting of bareroot and container seedlings. Container seedlings now comprise over 95 percent of the stock used in planting programs across Ontario. Seeding may be carried out directly from aircraft or by broadcast seeders on the ground. Renewal activities also include preparing an area disturbed by harvest or natural causes for regeneration through mechanical or chemical means, or by prescribed burning. The regeneration establishment period, from harvest to completion of the planting or seeding, can take up to five years.

Many tree species can re-establish themselves on a site without planting or seeding. These natural mechanisms include seeding from the adjacent forest or from cones left on site after the harvest (jack pine), suckering of stumps and roots (poplar), and continued growth of young trees remaining on the harvested area (black spruce). This natural regeneration can be enhanced through careful selection of the silvicultural system and harvest method (see Chapter 5).

In the past, reporting of natural regeneration annually at the time of harvest was not emphasized because some forest managers preferred to report it periodically after regeneration surveys had been completed. This delay in reporting, plus the regeneration establishment period, has in the past resulted in the reported annual renewal levels being substantially less than the reported annual harvest levels. With new reporting procedures introduced in 1996, natural regeneration is now reported promptly upon completion of the harvest.

Forest renewal operations were conducted on 180,550 ha of Crown land in 2004-05, see table 6a. The area renewed in 2004-05 includes treatments on areas harvested or naturally depleted in 2004-05 or earlier.

The choice of silvicultural system or harvest method used is largely dependent on the biological requirements of the different tree species (see Chapter 5, Forest Disturbance and Harvest). Regeneration

Table 6a Provincial renewal operations, 2004/05

REGENERATION	Northwest	Northeast	Southern	Total
UNEVEN-AGED MANAGEMENT				
Selection system (hectares)		1,219	7,056	**8,276**
Subtotal uneven-aged management		1,219	7,056	**8,276**
EVEN-AGED MANAGEMENT				
Natural Regeneration (hectares)				
Clearcut system	30,231	24,399	2,801	57,430
Strip cut		152	18	
Seed tree cut		1,535	394	**1,929**
Shelterwood system		3,318	3,225	**6,543**
Subtotal Natural Regeneration	30,231	29,403	6,437	66,071
ASSISTED REGENERATION				
Planting (hectares)	46,783	37,254	2,450	**86,487**
Trees (000's)				
Bareroot			373	373
Container	64,555	59,372	1,919	**125,846**
Seeding (hectares)				
Direct	10,687	5,949		**16,636**
With site preparation	2,956	12		**2,968**
Scarification (hectares)	41		72	**113**
Subtotal Assisted Regeneration (hectares)	60,466	43,215	2,522	106,203
Subtotal even-aged managment (hectares)	90,697	72,618	8,959	172,274
TOTAL REGENERATION (hectares)	**90,697**	**73,838**	**16,015**	**180,550**
SITE PREPARATION (hectares)				
Mechanical	39,398	23,111	789	**63,298**
Chemical	2,320	3,671	884	**6,874**
Prescribed burn				
TOTAL SITE PREPARATION (hectares)	**41,718**	**26,781**	**1,672**	**70,172**

under the uneven-aged selection silvicultural system is carried out in tolerant hardwood stands in the Southern Region and, to some extent, in the Northeast Region.

The clearcut silvicultural system is the primary system used in the Boreal Forest of the Northeast and Northwest regions, mainly in stands containing jack pine, black spruce, poplar, and white birch. Approximately 11 percent less area was reported as naturally regenerated under the clearcut system in comparison to the previous year.

Regeneration using the strip cut method is a variation of the clearcut silvicultural system. It involves the removal of the stand in progressive strips or blocks in more than one operation. The strip cut method is prescribed to encourage natural regeneration, provide wildlife habitat, protect fragile sites, or for aesthetics. Regeneration using the seed tree method is also a variation of the clearcut silvicultural system. It involves the removal of all commercial trees from an area, except for a small number of seedbearing trees left singly or in small groups for regeneration purposes. The seed tree method is used primarily in white pine and red pine stands in the Northwest and Northeast regions.

Natural regeneration using the shelterwood system occurs mainly in white pine and tolerant hardwood stands in the Northeast and Southern regions. Approximately 32 percent less area was reported as regenerated using this system in 2004-05 than in the previous year.

The total number of seedlings planted in 2004-05 was 126 million, a minor increase of 2 percent from the previous year (Figure 6b). The use of container

seedlings has remained relatively stable at more than 95% of the total stock used.

Jack pine is the main species used for seeding, most of which occurred in the Northwest region. The overall seeding levels in 2004-05 returned to more typical levels (19,604 hectares) after a spike of activity in 2003-04. Mechanical site preparation is the main site preparation method used in all regions, followed by chemical site preparation. Provincially, the total area treated with site preparation appears to be levelling out at just over 70,000 hectares after decreasing from higher rates in the past (Figure 6c).

The total reported level of regeneration (including both natural and assisted regeneration) decreased by 35,000 ha compared to the previous year (Figure 6d). Regeneration levels tend to follow fluctuations in harvest and, to a lesser degree, forest depletions from natural causes such as forest fires and insect epidemics.

Comparison of harvest and regeneration levels on an annual basis is not appropriate because of the regeneration establishment period and the reporting delay. Comparison of average harvest and regeneration levels over a five-year period is more appropriate. The 5-year average total provincial harvest area was approximately 215,025 hectares. The 5-year average total provincial regeneration level was approximately 208,000 hectares, or approximately 3 percent less than the average harvest level. More complete reporting requirements have resulted in reported regeneration levels moving closer to reported harvest levels over the last few years.

Figure 6a Regeneration area by silvicultural system

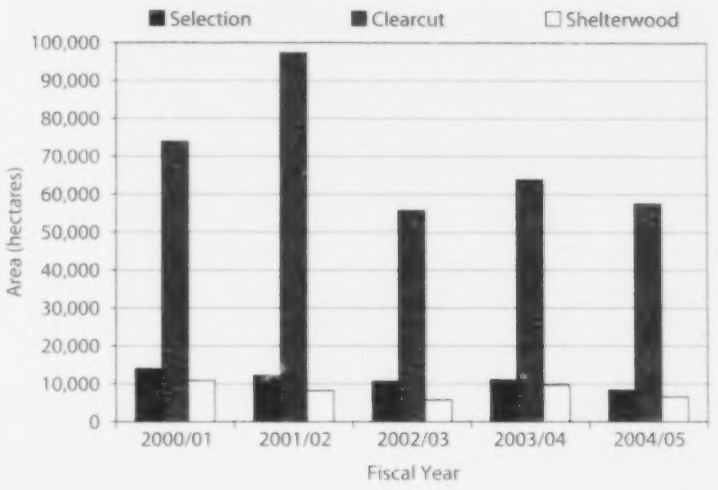


Figure 6b Total number of trees planted

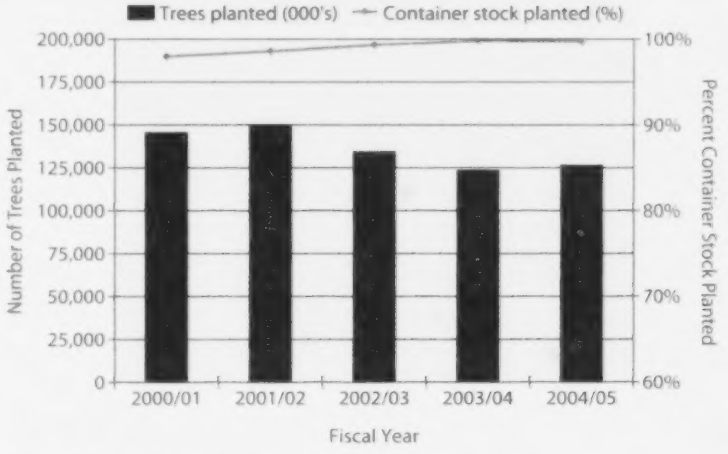


Figure 6c Seeding and site preparation area.

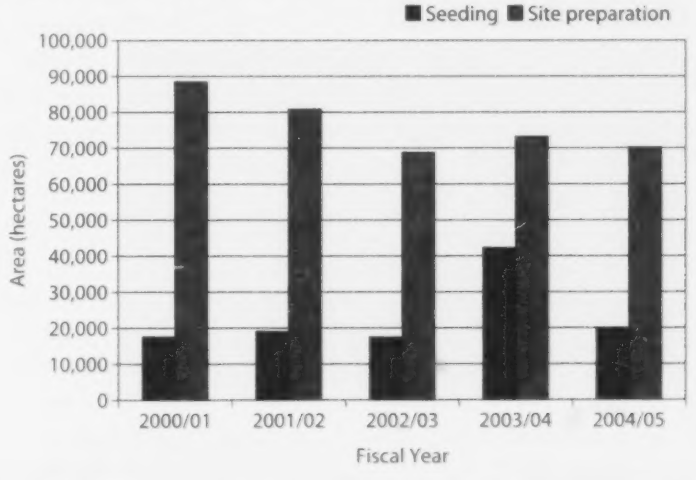
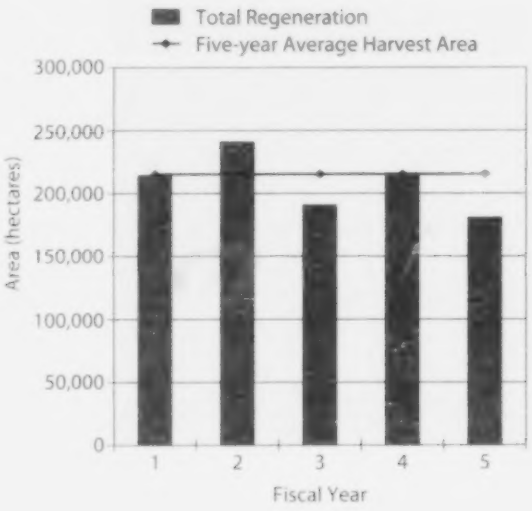


Figure 6d Provincial forest regeneration area



Forest Maintenance

Tending

Tending includes the operations of weeding, cleaning, thinning, spacing, and stand improvement. Forest tending operations are carried out to improve the survival, growth, or quality of a regenerating forest. Tending may be done in young stands to help attain Free-To-Grow status (for more information on Free-To-Grow, see Chapter 7, Silvicultural Effectiveness Monitoring), or conducted in uneven-aged stands to maintain the desired age-class distribution and volume.

Table 6b summarizes the tending activities conducted on Crown land in 2004-05, for the province and for each MNR region. Reported levels of tending were down slightly (3 percent) from the previous year.

Protection

Protection operations prevent or manage the damage caused by insects and diseases. No forest protection activities were reported in 2004-05.

Funding for Forest Renewal and Maintenance

The financial mechanisms established under the CFSA, and outlined in Chapter 3, ensure that there is funding available for forest renewal and maintenance.

Each SFL holder contributes the appropriate level of renewal charges to an account in the Forest Renewal Trust Fund, which may only be used to conduct eligible silviculture work on the specific licence area from which the monies were generated upon harvest.

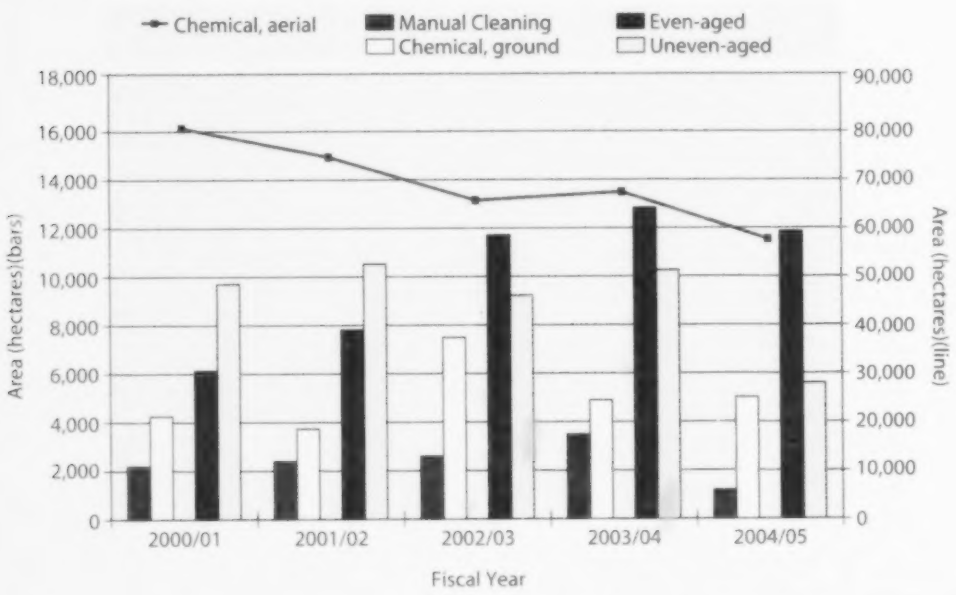
Forest resource licensees, operating on management units where no SFL exists, pay renewal charges into the Forest Renewal Special Purpose account. This account provides dedicated funding for forest renewal and tending operations.

The MNR is responsible for administration of the Forest Renewal Special Purpose Account. As with the Forest Renewal Trust Fund, each management unit has its own separate account to cover forest renewal and tending costs.

Table 6b Provincial tending activities, 2004/05

Tending (hectares)	Northwest	Northeast	Southern	Total
Cleaning				
Manual	573	240	368	1,181
Chemical - ground	1,707	2,009	1,292	5,007
Chemical - aerial	24,257	33,206	141	57,604
Mechanical				
Spacing, Precommercial Thinning, Improvement Cutting				
Even-aged	8,493	2,305	1,053	11,851
Uneven-aged		309	5,283	5,592
Total Tending	**35,030**	**38,068**	**8,136**	**81,235**

Figure 6e Provincial tending activities, 2004-05

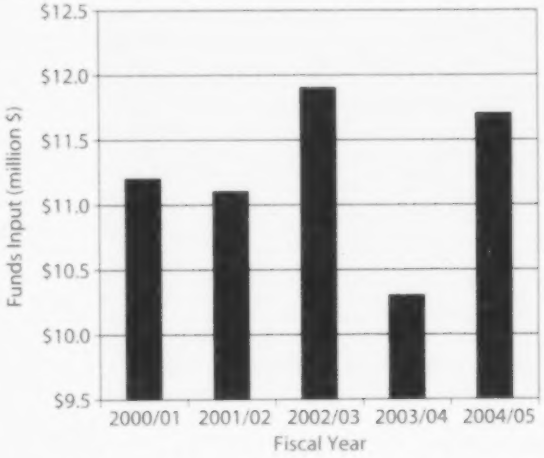


Money for a third fund, the Forestry Futures Trust Fund, comes from a portion of the Crown charges that all licensees pay. In addition, any administrative penalties assessed under the CFSA are paid into the Forestry Futures Trust Fund. This account, managed by the Forestry Futures Committee appointed by the Minister of Natural Resources, funds projects that meet MNR-approved criteria. To qualify, projects must be: a silvicultural activity on Crown land that addresses renewal of trees killed or damaged by fire; renewal of land where a licensee becomes insolvent; forest protection from insect or disease infestation; intensive stand management related to a critical wood supply; or, expenditures for Independent Forest Audits, Forest Resource Inventories, or conversion charges.

The annual contributions to the Forestry Futures Trust Fund since 2000-01 are presented in Figure 6f. Total funds deposited to the Forestry Futures Trust Fund in 2004-05 amounted to approximately $11.7 million.

In addition to these trust funds and special purpose accounts, the MNR supports forest renewal through the operation of the Ontario Tree Seed Plant and tree improvement programs.

Figure 6f Forestry Futures Fund Trust contributions



Total forest renewal and maintenance expenditures in 2004-05 totalled $107.3 million. The source of these expenditures is presented in Table 6c.

In 2004-05, some adjustments to renewal rates occurred on individual management units to reflect the local costs of renewing and tending various species and to reduce specific accumulated surpluses in individual Renewal Trust Fund accounts. These rates will continue to be reviewed and adjusted annually to ensure that adequate levels of funding are maintained. A complete listing of the 2004-05 renewal rates for each management unit is provided in Appendix 5.

Table 6c Provincial forest renewal expenditures, 2004-05

Table 6c Provincial forest renewal expenditures, 2004/05

Source	Expenditure (million $)
Forest Renewal Trust Fund	$95.60
Forestry Futures Trust Fund	$10.60
Special Purpose Account	$0.05[1]
Direct MNR Expenditures	$1.04
Total Renewal Expenditures	**$107.29**

[1] In 2004-05 the primary balance of MNR SPA expenditures are being reported as a portion of MNR direct expenditures due to account coding errors.

Chapter 7
Monitoring, Compliance and Audit

Forest management and operations in Ontario are monitored and audited to assess compliance and evaluate progress and results. The three types of monitoring used are effectiveness, effects, and compliance. The information collected and analyzed for effectiveness monitoring determines how well the forest is growing. Effects monitoring assesses the impacts of operations on various aspects of the forest ecosystem through long-term studies. Compliance monitoring is conducted to ensure that the MNR and the forest industry carry out operations according to plans, regulations, and the required standards.

Forest management is also audited through Independent Forest Audits, providing independent published assessments of management units across the province. Forest certification, a separate but related process, is a market-oriented means of promoting sustainable forest management, in which an independent third party evaluates forest management systems according to pre-established standards.

Silvicultural Effectiveness Monitoring

Harvest and renewal activities are reported annually for the year they are implemented. Determination of the success of these activities in regenerating the forest occurs by specific assessment methods, conducted a number of years (usually 5 to 15 years) after regeneration treatments are completed.

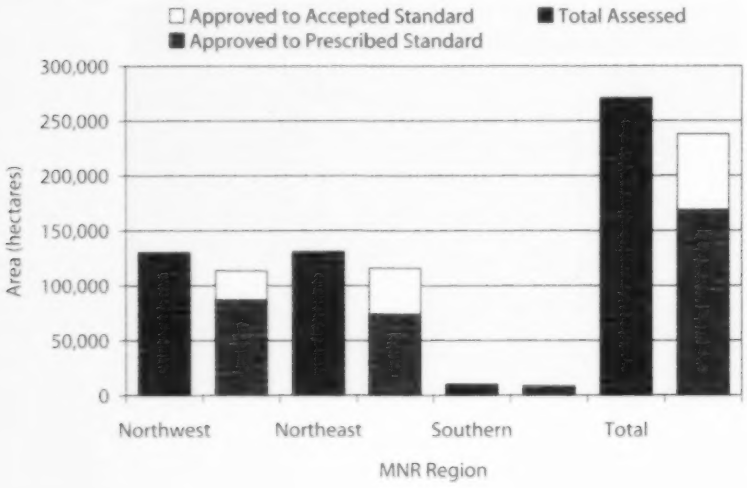
Free-To-Grow (FTG) assessments are an effectiveness monitoring tool that provides an indication of the success of silvicultural treatments, and information used to project the future forest condition. These assessments involve a variety of techniques, including field measurement of trees on sample areas of the forest, aerial surveys, and remote sensing. Some forest managers conduct these surveys annually, while others prefer to accumulate larger blocks that they assess once every few years. The Forest Renewal Trust Fund provides funding for these surveys on all management units, and many forest companies have assessed both their scheduled areas and backlog areas.

In the forest management planning process, silvicultural ground rules are developed for future regenerated stands. The prescription for a stand identifies silvicultural treatment packages that should result in the development of a prescribed future forest unit and also identifies other future forest units that will be accepted should the prescribed result not occur. Stands regenerating to alternate accepted FTG standards are being reported for the second time in this annual report. Of the total of 271,000 hectares assessed for FTG in 2004-05, 169,000 hectares (62 percent) were approved as having achieved the prescribed FTG standard within a set time period. This result varies by MNR region, from 87,000 hectares (67 percent) in the Northwest Region and 74,000 hectares (56 percent) in the Northeast Region to 8,000 hectares (82 percent) in the Southern Region.

An additional 69,000 hectares (26%) was approved as having achieved an alternate acceptable

FTG standard. Again this result varies by MNR region, from 27,000 hectares (21 %) in the Northwest Region, to 42,000 hectares (32%) in the Northeast Region and 400 hectares (4%) in the Southern Region.

Figure 7a Summary of area declared free-to-grow by MNR region, 2004-05



A summary of the area assessed and approved as FTG to the prescribed standard for the period 2000-2005 is presented in Figure 7b. In 2003-04 less than 80% of the management units supplied reports within timelines which would permit the inclusion of their data within that year's provincial report. As a result five-year trends that were reported in the Annual Report on Forest Management 2003/04 do not continue when this data amounting to approximately 70,000 hectares in additional area surveyed is included in this provincial report. The revised trend shows a gradual increase in total area assessed up until the last two years when it remains relatively constant. The area declared FTG to the prescribed standard increased for the first four years of the five-year period and then showed a substantial decrease in 2004-05. The area declared FTG to an alternative acceptable FTG standard stayed relatively constant for the first two years of the five-year period and then has shown large increases over the latter three years. A discrepancy in the actual field conditions encountered at the time of harvest versus that described in the Forest Resource Inventory is one of the common reasons noted for the use of an alternative acceptable FTG standard. Another somewhat common reason cited for regeneration to an alternate FTG standard is that post renewal forest unit developments may not be fully understood or that tending treatments may need to be more aggressive. Finally, management unit annual reports are now prepared in accordance with the 2004 FMPM which requires a clear delineation between those areas regenerated to the prescribed forest unit versus another forest unit.

In 2004-05 those stands regenerating to alternate accepted FTG standards are being included for the second time. Data has been included to depict a trend over the past five years, and is portrayed using a stacked bar graph (Figure 7b).

On a province-wide basis, the percentage of assessed area that was declared FTG to the prescribed standard has been quite variable over the five-year period and exhibited a 19% decrease in 2004-05 (Figure 7c). In 2004-05 Southern region reported a 60% decrease in the area assessed and a 59% decrease in the area reported as FTG to the prescribed standard. The area assessed in Northeast Region remained the same, while area reported as FTG to the prescribed standard decreased by 39%. These results are in contrast to the percentage increases that these two Regions reported in 2003-04. However, Northwest region which had reported a significant decline in these numbers in 2003-04 reported a 12% increase in the area assessed and a 9% increase in the area reported FTG to the prescribed standard. When the FTG data for both the area approved as FTG to an accepted standard and area approved FTG to a prescribed standard is included it becomes evident that the total per cent area approved as FTG, to either an accepted or prescribed standard, has increased over the five-year period from 78% in 2000-01 to 88% in 2004-05.

In 2004-05, 96% of the management units eligible to report, actually reported. Southern and Northwest Regions had 100% of management units reporting. However, 14 of the management units reported that they assessed zero hectares in 2004-05.

Figure 7b Summary of area declared free-to-grow by fiscal year

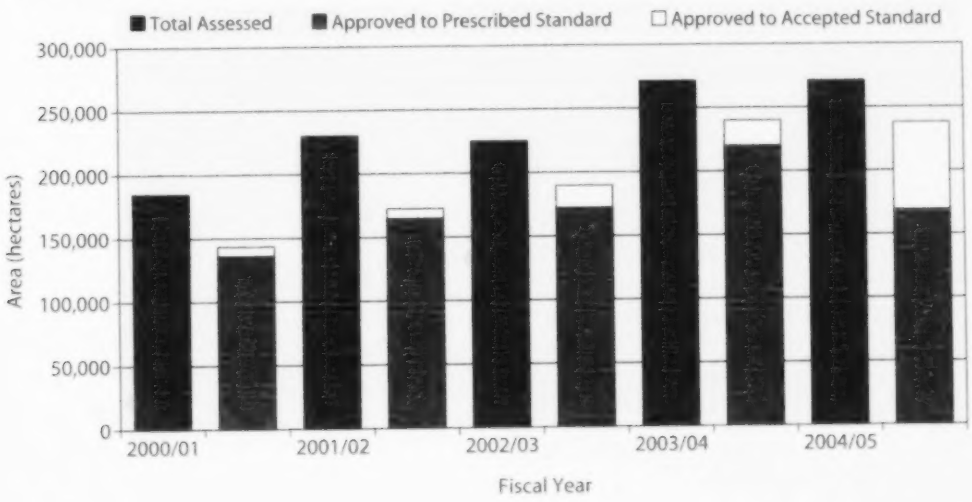
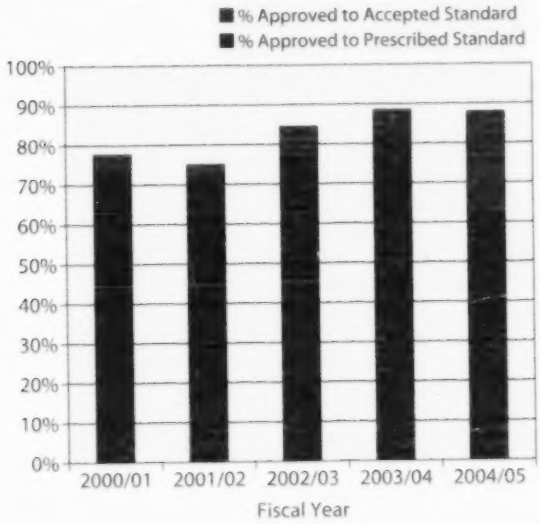


Figure 7c Percent assessed area declared free-to-grow for the Province



Regionally this varied from one in Southern Region, to eight in the Northwest Region, and five in the Northeast Region. These results may be influenced to some degree by the approach to surveys taken by local forest managers, some prefer to conduct their surveys annually, while others prefer to accumulate larger blocks that they assess once every few years.

Regenerating areas being reported in 2004-05 were harvested and treated a number of years ago (typically 5 – 15 years). However, in response to independent forest audit recommendations and inventory updating processes, a number of management units are continuing to assess backlogged areas which may be considerably older (for example 30 years and older). These older areas are not representative of current practices. Those treated prior to April 1, 1995 occurred before the implementation of the CFSA and the associated Forest Renewal Trust and Forestry Futures Trust Funds. Support from the Forestry Futures Trust and the Forest Renewal Trust Funds provide the funding for forest managers to ensure that harvested areas have the necessary treatments to achieve successful renewal. All harvested areas must be renewed successfully. Some of the areas found not FTG at this time need re-treatment, and others require tending (i.e. to suppress undesirable competing vegetation such as brush and grass). Other areas simply require the passage of more time to allow for the incremental growth necessary to meet the height standard for FTG. Renewal success rates should continue to improve in future reports because of these legislative and funding changes.

Compliance Monitoring

The forest operations compliance monitoring system in Ontario is designed to ensure the MNR and forest industry conduct forest operations in compliance with legislation and according to approved plans

(e.g. forest management, fire, compliance) and operational standards.

At the management unit level, compliance inspection reports are prepared for harvest, access, renewal, and maintenance operations. These reports help managers focus on activities that may require immediate attention, supply a database for identifying provincial trends, and provide feedback for compliance program adjustment.

The MNR's regulatory role is one of monitoring/auditing, conducting "spot-checks" of industry activity, investigation, and enforcement. The Sustainable Forest Licence holders (SFLs) have lead responsibility for conducting a comprehensive forest operations compliance program as a condition of their licence. The program includes planning, monitoring, inspection, reporting, training and education. On the few management units where the MNR still conducts forest operations, the MNR remains directly responsible for delivering all aspects of the compliance program.

It is mandatory for all MNR forest compliance inspection staff to use the Forest Operations Information Program (FOIP) to complete inspections of units managed by the Crown and any spot-checks or audits of SFLs. The forest industry completes and submits reports according to technical standards and requirements of the *Forest Information Manual*. In 2004-05 all forest industry companies used the FOIP application for electronic reporting.

This annual report summarizes data collected across the province from a standard electronic format for inspection reporting. Interpreting the data collected through FOIP requires experience and understanding of the systems and the functions as carried out through the MNR and forest industry partnership. The forest industry (SFL holder) as part of "industry self-monitoring and reporting" is required to report all incidents of non-compliance on their management unit to the MNR. This includes infractions incurred by the SFL, overlapping licensees, shareholders and any private individual who contravenes the CFSA. Incidents related to the latter are not recorded against the SFL i.e., they are deemed as "non SFL related". The SFL does not have responsibility for assessing the significance of non-compliance. This is strictly an MNR responsibility as the regulatory agency.

The MNR's regulatory role, with respect to forest operations compliance, includes the verification of all instances of non-compliance as reported by companies. MNR verification of an industry non-compliance forms part of the industry inspection. The MNR will actively monitor non-compliant incidents that are assessed as moderate or significant until they are resolved. The information from this monitoring is reported as part of the compliance issues in FOIP. Reporting of these actions in FOIP as part of the compliance issues within an industry inspection report eliminates duplicate reporting of infractions. In addition, the MNR undertakes random as well as planned spot-checks and audits of forest operations. This may result in additional reports of non-compliance which may not have been reported by a company, due to a difference in interpretation between industry and the MNR. In some cases, especially those of a minor nature, industry may remedy the situation and deem the infraction too minor to report. Some companies may record an incident as "in compliance with comments". This category recognizes that a minor situation is present, generally correctable, and with some room for improvement in operational practices.

In 2004 the MNR developed a web site which provides access to the management unit annual reports of forest operations inspections. The web site is accessed through the forest monitoring link at http://ontariosforests.mnr.gov.on.ca. This web site addresses condition 27(d) of the Forest Management Class Environmental Assessment approval. MNR will be adding reports on this web site each year until five years of reports are available.

The on-going training of all field inspectors will continue to narrow the gap in compliance interpretation. In order to improve overall skills and competencies in compliance assessment and reporting, and to enhance standardization, a compliance inspector competency training and certification program was initiated in 2001. Initially only MNR inspectors required certification. However, in 2004 the program was expanded to include mandatory certification of Forest Industry

inspectors. In 2004-05, 97 forest sector and MNR inspectors were certified. This competency certification program is being implemented to fulfill EA condition 27(e).

Results of both industry and MNR compliance inspections are summarized in Table 7a. For comparison purposes, Table 7a also has rows at the bottom that list the 2001/02 to 2003/04 report summaries.

Overall, inspection of forest operations for the past three years has remained relatively constant. The compliance rate as reported by the forest sector for 2004-05 is 96%. The compliance rate has remained stable at about 95% for 5 years. The 4 to 5% non-compliance rate relates primarily to minor infractions. The MNR focused its auditing and spot-checking on those operations having the greatest potential for impact on the environment and sustainability of the forest. In 2004 MNR initiated use of a new system for reporting compliance inspections. FOIP has many reporting related improvements relative to the previous FOCIS system. MNR verifications of industry reported non-compliances are no longer counted as a separate inspection, these verifications are now tracked as part of the initial industry inspection. Several inspection types were eliminated in FOIP that were in FOCIS. The information from these inspections is now included as part of the compliance issue. One compliance issue may be initiated for several non-compliances or there may be several issues for one non-compliance. These changes have resulted in a reduction in the number of inspections indicated in the table and the number of non-compliance inspection reports and the number of compliance issues indicated in the table no longer correlate.

Road Washouts

Compliance inspections of water crossings conducted throughout 2004-05 indicate that forest companies reported 23 washouts. Thirty eight additional washouts were identified by the MNR for a combined total of 61. Washouts can occur due to a number of

Table 7a Forest operations compliance inspection reports summary, 2004/05

	INDUSTRY			MNR					
							Significance of Compliant Issues		
Operation Type	Total # Reports	Total # Compliant Reports	Total # Non-Compliant Reports	Total Audits, Checks, Verifications	Total # Compliant Reports	Total # Non-Compliant Reports	Minor	Moderate	Significant
Access	1448	1383	65	455	344	111	156	33	2
Harvest	4101	3947	154	1006	870	136	226	73	4
Renewal	667	656	11	97	94	3	12	1	0
Maintenance	284	277	7	11	1	10	5	2	0
TOTAL REPORTS*									
2004/05	**6500**	**6263**	**237**	**1569**	**1309**	**260**	**399**	**109**	6
2003/04	6888	6565	323	2216	1809	407	331	66	10
2002/03	7455	7074	381	1856	1469	387	298	68	21
2001/02	6753	6399	354	2117	1621	496	355	109	32

*Source: 2004-05 data FOIP Aug 1, 2006
*Source: 2001-02, 2002-03 and 2003-04FOCIS

Notes:
1) In 2004 MNR initiated use of a new reporting system called the Forest Operations Information Program (FOIP). MNR verifications of industry reported non-compliances are no longer considered a separate inspection. These verifications are now tracked as part of the initial industry inspection. These changes have resulted in a reduction in the number of inspections compared to previous reports as indicated in the table.
2) Compliance issues and non-compliant reports are separate items in FOIP, therefore the number of non-compliance inspection reports and the number of compliance issues indicated in the table do not correlate.

factors, including natural causes such as spring flooding, heavy and/or prolonged rains, blockage due to beaver activity, and poor road construction techniques.

Actions Taken

In the self-monitoring and reporting compliance partnership model, industry must report non-compliance situations, and the MNR verifies, assesses the significance, and determines the appropriate remedy and enforcement action if any is required.

In many instances of minor non-compliance, immediate remedial action is undertaken and enforcement measures are not warranted. While the CFSA remedy and enforcement provisions apply largely to licensees of the Crown, any person who contravenes the CFSA may be charged. A total of 8 offence charges were laid under the CFSA (see Table 7b).

Although all incidents of non-compliance are reported in the fiscal year in which they occurred, a number of cases are ongoing (under investigation or subject to court action) in terms of remedy and enforcement action. These will be recorded when resolved.

Table 7b Remedy and enforcement action taken, 2004-05

Method	Count	Fine
Administrative Penalty[a]	30	$94,010.28
Offence Charge[b]	8	$14,870.00
Stop Work Order	0	n/a
Repair Order	7	n/a
Compliance Order	24	n/a
Warnings	126	n/a
Self Correction	217	n/a
Non Issue	42	n/a
Total Actions Taken 2004-05	**454**	**$108,880.28**
Investigations (no charges warranted)	3	n/a
Total Actions Taken 2003/04	56	$213,151.10
Total Actions Taken 2002/03	177	$190,211.70
Total Actions Taken 2001/02	113	$121,069.44

[a] To Forestry Futures Trust Fund
[b] To Consolidated Revenue Fund (general revenue)

Source: FOIP (Forest Operations Information Program) February 2006 / OTAR (Ontario Timber Accounts Receivable) July, 2006

Independent Forest Audits

Independent Forest Audits are a requirement of the CFSA and Ontario Regulation 160/04, Condition 28 of MNR's Class Environmental Assessment Approval for Forest Management on Crown Lands in Ontario (2003), and are a condition of SFLs. All management units are audited at least once every five years to review operations and examine the forest management activities carried out over the previous five years.

In June 2004 MNR passed a regulation under the CFSA to provide for the conduct of independent forest audits. The audit regulation addresses condition 28(a) of the Forest Management Class Environmental Assessment approval which requires the enactment of a regulation to govern the conduct of independent forest audits. This regulation adds a key element to the legal context for audits – a general framework within which the audit program must be carried out. The detailed procedures for conducting audits are described in the Independent Forest Audit Process and Protocol.

The audit is a systematic and documented verification process to assess adherence to the FMP and the planning process. Assessing the interpretation and application of provincial legislation, manuals, policies, and guidelines at the management unit level is also part of the audit. Auditors examine the effectiveness in achieving the planned objectives and provide an assessment of forest sustainability for the management unit. Audit teams review licensee compliance with the obligations of their specific SFL.

In order to address the audit purpose and objectives, the audit process and protocol document sets out the forest management principles, criteria, and procedures for undertaking Independent Forest Audits. The audit protocol identifies eight guiding principles, identified by the following titles: commitment, public participation, forest management planning, FMP implementation, systems support, monitoring, achievement of management objectives and forest sustainability, and contractual obligations. For each principle, a series of specific criteria are identified that, when met, will result in achievement of the principle.

The audit terms of reference are the same for all Independent Forest Audits, including the audit team personnel requirements. All members of an audit team must have a minimum of seven years recent and relevant experience in forest types similar to those being audited. They must be independent of the operations they audit as well as free from conflict of interest throughout the process. The audit team must include a Registered Professional Forester. For the 2004 audits, the audit team was required to provide an audit against the requirements that were in effect during the audit period and prepare the subsequent report for publication.

Action plans must be developed in response to each audit report. The SFL holder and the applicable MNR district jointly develop the action plan. For each recommendation in the audit report, the action plan must state the required action, the organization and individual responsible for the work, deadline dates, and a method of tracking the progress of the action plan. A status report on the action plan is required two years after its approval to ensure that progress is occurring as specified in the plan. The Independent Forest Audit reports are tabled in the legislature and are available upon request.

Summary of the 2004 Independent Forest Audits

The 2004 Independent Forest Audits were completed on eight management units. Six of the management units were managed via SFLs throughout the five-year audit period. Two management units were in transition, which resulted in a mix of Crown and SFL management during the period. External consultants, independent of the licensees and the MNR, carried out the audits. Table 7c provides a complete listing of the 2004 audit reports by forest manager and independent auditor.

All 2004 audit reports except the Caribou and Kenora Forests, concluded that the forests were being managed in general compliance with legislation and policy, with licence requirements, and with principles of sustainable forest management during the term of the audit (Table 7d). Seven of the audit reports recommended that the sustainable forest licence should be extended for a further five-year term. The Caribou IFA identified a licence extension recommendation that is conditional on Bowater and MNR fully implementing five recommendations related to planning and reporting.

The Big Pic Forest audit report identified 23 recommendations for improvement and one best practice relative to the management of the Forest. Public participation could be improved by ensuring the local citizens committee is involved in values mapping and that Forest Management Planning Manual (FMPM) procedures for the preparation and issuance of public participation reports and notices are followed. The report identified six recommendations for improving forest management planning: (a) Plan objectives must include quantifiable targets where possible; (b) Amend silvicultural ground rules to ensure they match actual site conditions; (c) Values data must be complete and up-to-date (d) Forest Resource Inventory updates and summary reports must be done in a timely manner;

Table 7c 2004 Independent Forest Audits

Report/Forest(s)	Licensee/Forest Manager	Independent Auditor
Big Pic Forest	Marathon Pulp Inc.	KBM Forestry Consultants Inc.
Caribou Forest	Bowater Canadian Forest Products Inc.	ArborVitae Environmental Services Ltd.
Kenora Forest	Trus Joist, Kenora Operations, a division of Weyerhaeuser Company Limited & MNR Kenora Dist.	KBM Forestry Consultants Inc.
Lakehead Forest	Greenmantle Forest Inc.	BioForest Technologies Inc.
Mazinaw-Lanark Forest	Mazinaw-Lanark Forest Inc. & MNR Bancroft and Kemptville Districts	KBM Forestry Consultants Inc.
Timiskaming Forest	Timiskaming Forest Alliance Inc.	BioForest Technologies Inc.
Trout Lake Forest	Weyerhaeuser Company Ltd.	Arbex Forest Resource Consultants Ltd.
Whiskey Jack Forest	Abitibi-Consolidated Company of Canada	KBM Forestry Consultants Inc.

Table 7d Independent Forest Audit results for 2004 audits

Management Unit	In Compliance[1]	Sustainably Managed	SFL Extension Recommended[2]
Big Pic Forest	yes	yes	yes
Caribou Forest	partial	yes	conditional
Kenora Forest	partial[3]	yes	yes
Lakehead Forest	yes	yes	yes
Mazinaw-Lanark Forest	yes	yes	yes
Timiskaming Forest	yes	yes	yes
Trout Lake Forest	yes	yes	yes
Whiskey Jack Forest	yes	yes	yes

[1] Managed in overall compliance with legislative and policy requirements in effect during the audit period.
[2] This column is only applicable to management units managed under a Sustainable Forest Licence.
[3] Management of the Kenora Forest has been in compliance with the legislation, regulations, and policy that were in effect during the audit term. Weyerhaeuser Company Limited has not met all of the contractual obligations of the terms of the Sustainable Forest Licence, particularly in relation to Appendices E & F.

(d) Plan amendments must be distributed as required by the FMPM; and (e) Forest operation prescriptions must be properly documented, certified and tracked. In order to enhance plan implementation, the report made several recommendations pertaining to reduction in loss of productive area to slash piles and bypassed areas, improvement of forest utilization and better adherence to aggregate pit and access road water crossing guidelines. To improve monitoring of forest management activities, the company must extend its silvicultural effectiveness program to include naturally regenerated sites. The company and MNR must ensure that annual and Aboriginal negotiations reports are submitted and approved as required by the FMPM. Achievement of forest sustainability could be enhanced by managing the wood supply for both pulp wood and sawlogs and reflecting this in the objectives of the forest management plan. Several recommendations were directed at contractual obligations: (a) Marathon Pulp Inc. (MPI) must put in place long-term Memoranda of Agreements regarding wood commitments to other companies as stipulated in their licence; (b) MPI must review and classify the barren and scattered stands for use in the planning inventory; (c) MPI must ensure that areas surveyed for regeneration are appropriately stratified and mapped; and (d) MNR must ensure adequate records are being kept to verify mining claim holders are notified of proposed forestry operations.

The best practice recognized the thoughtful analysis of historic forest condition and fire event data carried out by the planning team in setting the desired future forest composition in the forest management plan.

The Caribou Forest audit report identified 37 recommendations for improvement, as well as a licence extension recommendation that is conditional on Bowater and MNR fully implementing five recommendations related to planning and reporting. The auditor noted that seven of the eighteen recommendations from the 1999 audit had not been adequately addressed. The auditor made three recommendations focused on improvements to the planning process, including terms of reference documentation and improving the efficiency in tracking and responding to public comments. Eight recommendations are targeted at ensuring that the forest management plan, annual work schedule and amendment requests meet regulated requirements and that MNR's review of these documents is timely. The auditor has recommended that the next Forest Management Plan (FMP) explore a more flexible application of the caribou guidelines to mitigate future declines in harvest volume and old forest which provides caribou habitat. Under-harvest has been an ongoing problem on this forest and the auditor has therefore recommended that a detailed review of the

reasons why this continues to occur be completed. Three recommendations are directed at improving MNR and Bowater compliance planning, while a further four recommend a higher frequency of spot checks by MNR, a higher frequency of inspections related to remote tourism Areas of Concern (AOCs), more joint inspections or meetings between the MNR, Bowater and Buchanan Forest Products Limited, and the development and implementation of strategies to achieve full compliance with the handling of Forest Operations Inspection Reports. The auditor identified five recommendations dealing with reporting on the Forest. These included a key recommendation to ensure that all of the annual reports for the audit period are accepted by September 1, 2005, as well as a recommendation to ensure that annual report submissions meet the requirements of Forest Information Manual (FIM) and FMPM, and that the district review is timely. The company also should complete its past due report of past forest operations (RPFO) as soon as possible. Maintenance of water crossings should be improved and the program for the installation of cross drains should be reviewed. The auditor also recommends that information related to the effectiveness of natural regeneration be assembled and analyzed for use in the 2007 plan and remaining un-surveyed areas should be assessed for free-to-grow.

The Kenora Forest audit report identified 20 recommendations for improvement and two best practices relative to the management of the Forest. To enhance the use of forest values information in the Forest Management Planning process, MNR needs to improve the process of updating electronically-stored values information 'layers', and must carry out a moose aquatic feeding site survey. To improve the effectiveness of prescriptions to protect identified values, MNR and Weyerhaeuser must ensure that alternative prescriptions, where considered, are recorded in the supplementary documentation for the FMP, and must ensure that appropriate monitoring programs are put in place for differently-treated "exception" prescriptions. A recommendation and two suggestions are directed to Weyerhaeuser to improve its communication of silviculture strategies. Four recommendations aimed at improving forest operations compliance need immediate attention by Weyerhaeuser and MNR – improving focus on water crossings, ensuring (by MNR) that appropriate enforcement activities are applied, ensuring that standards are enforced through compliance inspections and ensuring (by Weyerhaeuser) that applicable rules and guidelines governing pit and road construction activities are employed on the Forest. Furthermore, three recommendations pertaining to contractual obligations must be completed to meet all of the contractual obligations of the SFL. A key component of these recommendations is that the Minister appoint a mediator, under the provisions of Section 38(2) of the *CFSA*, to ensure that the issue between Weyerhaeuser and the overlapping licensees is resolved.

The best practices recognized the benefits of using the Working Circle concept in managing the Kenora Forest, and the archiving of 40 years of silvicultural renewal records into a geographically referenced electronic database.

The Lakehead Forest audit report identified 14 recommendations for improvement and one best practice relative to the management of the Forest. Improvements are needed in the functioning of Forest Management Planning teams, including more clearly defined procedures for the conduct of meetings and the prompt referral of impasses to the Steering Committee for resolution. The Black Bay Peninsula Enhanced Management Area Strategy is to be reviewed by MNR five years after implementation to determine how it is impacting wood supply on the Lakehead Forest. Greenmantle must make improvements to the production of Reports of Past Forest Operations, including provision of a more complete explanation of sizeable harvest overachievements and a fuller assessment of forest sustainability. Progress in responding to Independent Forest Audit results needs to be addressed in Annual Reports. MNR and Greenmantle should continue to follow up on incomplete action items from the 1999 Independent Forest Audit.

The best practice recognized the exceptional level of cooperation and perseverance displayed by Greenmantle, MNR Thunder Bay District and par-

ticipating overlapping licensees in salvaging damaged timber following a severe July 1999, windstorm.

The Mazinaw-Lanark Forest audit report identified 18 recommendations for improvement and two best practices relative to the management of the Forest. One recommendation was aimed at improving First Nation participation in economic benefits from the forest. Several recommendations are aimed at enhancing effectiveness of the Forest Management Planning process through the improvement of values mapping, updating of local economic profiles, better quantification of management objectives and inclusion of audit results in future plans and reports. In order to enhance plan implementation, MNR and Mazinaw-Lanark Forest Inc. (MLFI) must work together to improve poor compliance results for overlapping licensees through improvements in reporting and better use of the full range of enforcement provisions in the Forest Compliance Handbook. To improve monitoring of forest management activities MNR and MLFI must maintain adequate numbers of qualified compliance staff, ensure their independence and ensure timely submission of compliance and annual reports. MLFI must complete, analyze and report all required free-to-grow and post harvest surveys. In order to improve the achievement of management objectives and forest sustainability, MLFI must prepare future annual reports using all available data to facilitate assessment of forest ecosystem changes and ensure that the appropriate annual reports provide a complete and meaningful review of objective achievements. With respect to contractual obligations, MNR must follow-up on a previous audit recommendation to do a fisheries inventory on waterbodies near proposed forestry activities. MNR and MLFI must also ensure production of the Forest Resource Inventory and values maps are completed.

One best practice recognized the quick and effective action taken by the MLFI, the local citizens committee and MNR to resolve concerns brought forward by a conservation authority after the FMP had been approved. The second best practice was attributed to the quick action taken by MLFI, assisted by MNR, to meet licence commitments and ensure the best end use of salvage material.

The Timiskaming Forest audit report identified nine recommendations for improvement relative to the management of the Forest. Three recommendations were directed at corporate MNR including, finalizing and distributing the Condition 34 guidelines, SFL completion of the memorandum of agreement with Commonwealth Plywood or revision of Appendix E, and reviewing the mechanism for setting salvage rates to ensure that the price is based on fair market assumptions and that the decision is timely. MNR should provide clear prescriptions for raptors in the next FMP. Timiskaming Forest Alliance Inc. (TFAI) and MNR are to improve the operational efficiency for field identification of streams. This Forest is generally young and fragmented due to mixed ownership patterns as well as the past fire and logging history, which presents a challenge to planning teams to ensure that there is continuing progress towards meeting old growth and minimum ten percent marten core requirements. Due to failures in poplar regeneration on productive sites, the auditor recommended that TFAI monitor trials and implement the most effective renewal treatments and seek funding assistance from the Forestry Futures Trust. A separate summary should be prepared for each RPFO in the future.

Three best practices related to operational planning were also identified. The TFAI has used virtual technology to develop a surface water analysis tool that increases the speed and accuracy of operational planning for stream flows and to simulate harvest planning adjacent to Lady Evelyn Lake. It also has created a series of operational manuals that in association with the training provided ensure that TFAI shareholders and operators understand the detailed operational direction that is to be used during operations.

The Trout Lake Forest audit report identified 12 recommendations for improvement relative to the management of the Forest. Information management and reporting require significant improvement. Weyerhaeuser needs to take immediate action to address the backlog in regeneration surveys. Improving the quality of compliance data should also be a priority for Weyerhaeuser. Two recommendations

focus on issues related to applying the caribou management guidelines: MNR should assess and publicly report on the impact of guidelines implementation on forest users; and the area defined as Caribou Block 23(a) should be excluded from the available harvest area in the 2009 FMP if a decision has not been made with respect to forest management access.

The Whiskey Jack Forest audit report identified 22 recommendations for improvement relative to the management of the Forest. Issues of particular note are the need to develop a cooperative, constructive relationship between Abitibi and the MNR in relation to interpretation of standards and expectations for compliance monitoring, and in the submission and review of FMPs and the RPFOs. A second key issue relates to the need to resolve the ongoing dispute with Grassy Narrows First Nation. Two recommendations are associated with the issue resolution and bump-up request processes. Annual reports on the specific action plans developed to address the issues need to be completed and provided to the affected parties and the Local Citizens' Committee (LCC). The MNR in consultation with the Ministry of the Environment must improve communication of these processes to raise the level of understanding by the public and LCC as to what is actually addressed by these processes. Three recommendations are directed at the renewal program. The first indicates that thorough silvicultural strategies be developed for the Silvicultural Ground Rules (SGRs) and that these be linked to the selected management alternative. The second identifies the need for an approved vegetation control program which did not occur in three of the five audit years, and finally that all renewal treatments must follow the SGRs and forest operations prescriptions, which should reflect actual site conditions. Three recommendations are targeted at the need to ensure that all exceptions are identified and supported by a monitoring plan which is reported in the annual reports, and finally that Forest Management Branch must clarify how monitoring program results will be reported and assessed. Technical issues related to exporting digital values data to the SFL must be resolved. Three recommendations were directed at ensuring that Abitibi reports all previously unidentified values (particularly streams), that all streams in future plans be afforded protection and that cross drains be installed. Due to the observance of a number of instances of rutting, the auditor has identified the need to develop operational practices that minimize site disturbance when harvesting on silt or clay soils. The action plan status report for the 1999 audit must be submitted prior to any licence extension.

During the audit period a problem arose in relation to protection of streams not identified on 1:50,000 maps. Such streams were often not provided with an Area of Concern prescription and the actual water crossing installations were poor. To solve the problem, Abitibi and MNR developed a stream crossing toolkit and an identification and classification document, which the auditor identified as a best practice.

Summary of 2000 - 2004 Audit Reports

Following the completion of the 2004 audits, the program is in the fourth year of its second cycle of Independent Forest Audits. Table 7e summarizes the audit results from 58 audit reports completed over a 5-year period from 2000 to 2004. During this 5-year period 47 reports indicate that the majority (81%) of Management Units were managed in accordance with legislative and policy requirements that were in effect during the audit term. A further 8 reports (14%) were generally managed in compliance with legislative and policy requirements, however in these instances the auditor noted significant exceptions or conditions. Only 3 of the reports (5%) reached a wholly negative conclusion with respect to compliance with the requirements. The audit program is therefore serving its purpose. Audit reports identify areas for improvement and the MNR and SFL holders continue to respond by putting solutions in place. These solutions are documented in mandatory action plans that are developed subsequent to the completion of audit reports.

Future Program

There are eleven Independent Forest Audits planned for 2005: Cochrane-Moose River Management Unit,

Table 7e Summary of 2000-2004 Audit Reports

Audit Year	Audit Reports[5]	In Compliance[1]	In Compliance with Conditions or Significant Exceptions	Forest Manager			SFL Extension Recommended[2] (Crown Units not Eligible)
				Crown	Transition	SFL	
2000	16	11	5	3	3	10	13[4]
2001	19	18	—	4	9	6	15
2002	9	6	1	—	3	6[3]	7
2003	6	6	0	—	2	4	6
2004	8	6	2	—	—	8	8[6]
Total	**58**	**47**	**8**	**7**	**17**	**34**	**49**

[1] Managed in overall compliance with legislative and policy requirements in effect during the audit period.
[2] SFL extension supported where applicable and/or licence obligations met during short term as licence holder.
[3] The Agreement with the Algonquin Forest Authority is included in this number.
[4] Three of the 2000 audit reports concluded that licence renewal was recommended conditional upon the SFL holder making progress to resolve / implement the recommendations for which they are specifically responsible.
[5] It should be noted that 58 management units currently exceeds the number of management units in the province, the reduction in management units is due to amalgamations that have occurred over time.
[6] Two of the 2004 audit reports concluded that management was not in compliance with all of the legislation and policy requirements and/or that not all of the licence obligations had been met.

Dog River-Matawin Forest, English River Forest, Gordon Cosens Forest, Iroquois Falls Forest, Kenogami Forest, Ogoki Forest, Red Lake Forest, Smooth Rock Falls Forest, Spanish Forest, and Wabigoon Forest(see Figure 7d). The results of these audits will be published upon completion. All of these Forests are being audited for a second time under the Independent Forest Audit Program.

Forest Certification

Forest certification is a market-oriented system which evaluates forest management systems and or operations in reference to ecological, economic and social standards. In April 2004, the Minister of Natural Resources announced his intentions to have all licensed Crown forests certified to an acceptable performance standard. The certification process requires applicants to demonstrate that they are complying with, or progressing towards, those certification standards. Forest products consumers are assured of an unbiased evaluation when forest certification evaluations are implemented by independent third party organizations (called certifiers). Within the limits of its provincial government mandate, the MNR provides technical and policy advice, both during the development of certification systems and to forest companies seeking certification of forest lands in Ontario.

There are three forest certification standards being considered by Ontario forest companies.

1. The two standards of the international Forest Stewardship Council (FSC) Principles and Criteria for Forest Management that are applicable to Ontario - FSC Standards for Well Managed Forests in the GLSL Forests of Ontario and Quebec (draft) and the National Boreal Standard
2. The Canadian Standards Association (CSA) Sustainable Forest Management (SFM) Standard, approved by the Standards Council of Canada, and
3. The American Forest and Paper Association's Sustainable Forestry Initiative (SFI).

Many companies, as a first step in forest certification, have registered their environmental management systems to the International Organization for Standardization Environmental Management System (ISO) 14001.

During the 2004-05 fiscal year eight forests achieved forest certification. Five forests achieved SFI certification. Four of the five forests were managed by Bowater Pulp and Paper Canada Inc., namely the Black Sturgeon, Dog River-Matawin, English River and Caribou. The fifth forest was managed by Neenah Paper Company of Canada when the forest was certified, but has been transferred

Figure 7d Management units audited in 2004, and management units scheduled for audit in 2005

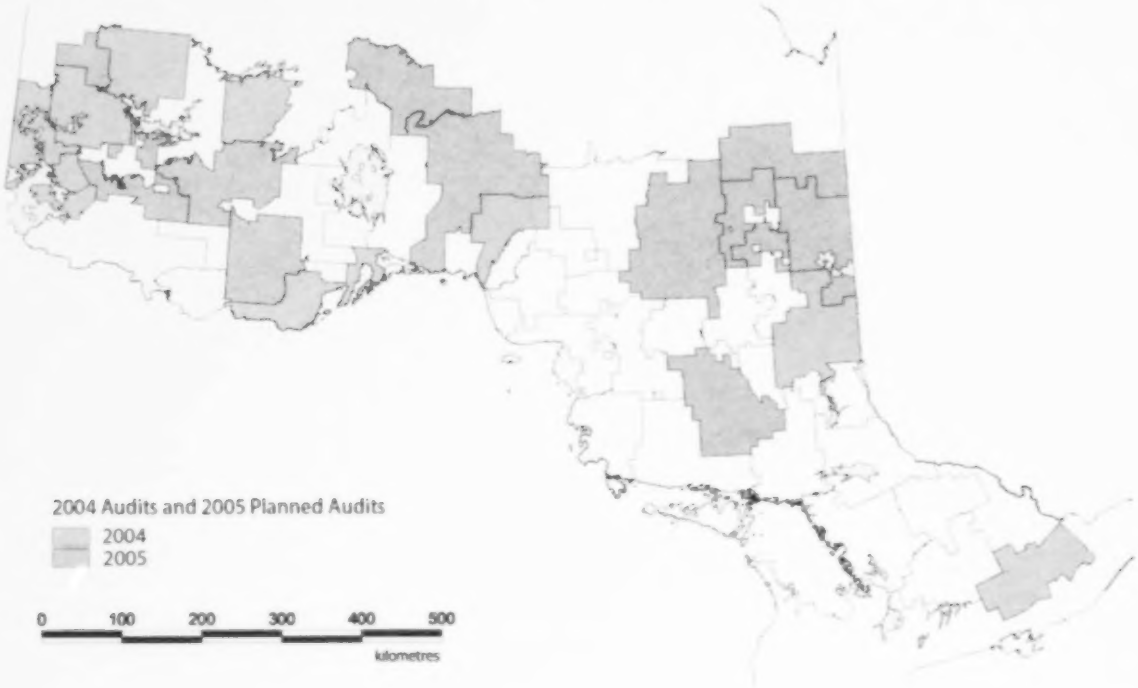
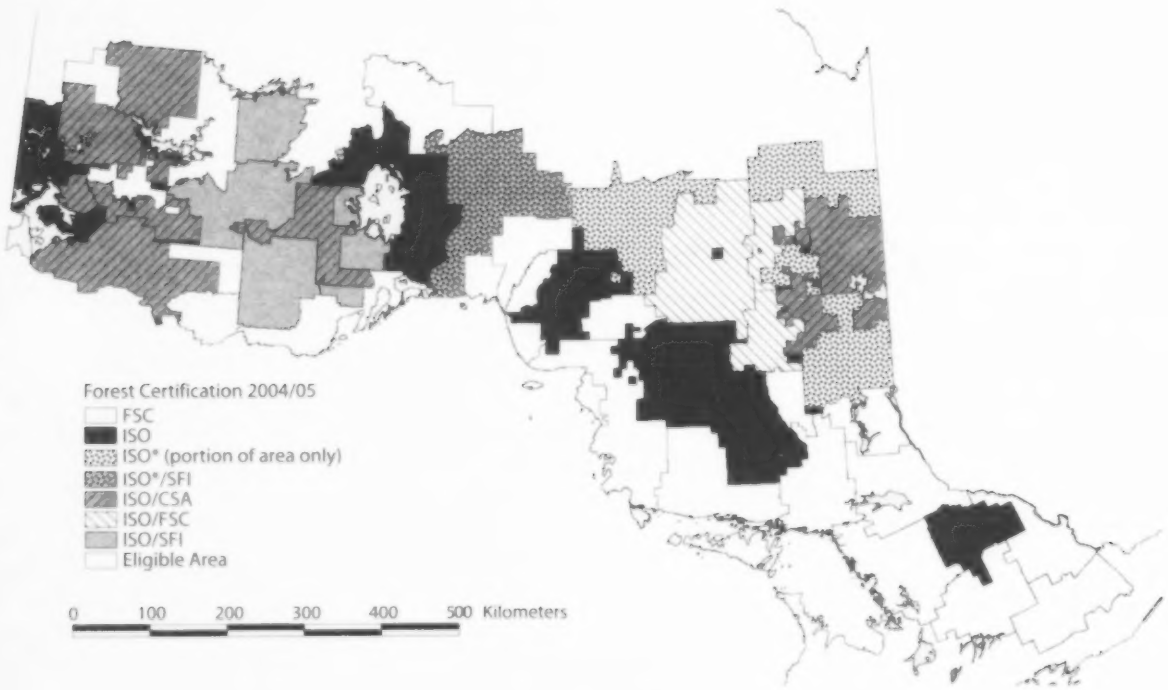


Figure 7e Status of forest certification in Ontario, March 31, 2005



since that time to a new company known as Terrace Bay Pulp Inc. The Smooth Rock Falls and Romeo Malette Forests, managed by Tembec Industries Inc. were certified under the FSC, National Boreal Standard. The Whiskey Jack Forest, managed by Abitibi-Consolidated Company of Canada, was certified under the CSA standard. In addition, all previously registered/certified forest units continued efforts to demonstrate ongoing conformance to their selected certification systems during the fiscal year. It is anticipated that additional forest management units will become certified in the near future.

The MNR ensures the sustainable forest management of Crown forests through a rigorous policy and regulatory framework. Forest companies operating in Ontario are required to comply with long-term, ecosystem-based forest management planning. Extension of SFLs is dependent upon satisfactory results of a mandatory Independent Forest Audit. Therefore, forest management companies in Ontario are well positioned to meet any forest certification/registration system standard.

8 Aboriginal Peoples

Condition #34 of the Declaration Order regarding MNR's Class Environmental Assessment Approval for Forest Management in Ontario requires MNR district managers to conduct negotiations at the local level with Aboriginal peoples whose communities are situated in a management unit, in order to identify and implement ways of achieving a more equal participation by Aboriginal peoples in the benefits provided through forest management planning. These negotiations will include but are not limited to the following matters:

a) Providing job opportunities and income associated with forest and mill operations in the vicinity of Aboriginal communities;

b) Supplying wood to wood processing facilities such as sawmills in Aboriginal communities;

c) Facilitation of Aboriginal third-party licence negotiations with existing licensees where opportunities exist;

d) Providing forest resource licences to Aboriginal people where unallocated Crown timber exists close to reserves;

e) Development of programs to provide jobs, training and income for Aboriginal people in forest management operations through joint projects with Indian and Northern Affairs Canada; and

f) Other forest resources that may be affected by forest management or which can be addressed in the forest management planning process."

For the purposes of this Chapter, use of the term "Aboriginal" will be used to include any and all or most references to "First Nations" and "Native" as per the definition in the Canadian Constitution s 35(2), unless quoted directly from a source or in the use of a proper name.

Implementation of Condition #34

The scope of condition #34 is broad, and its application and implementation are determined at the local level. The arrangements and agreements effected by MNR district managers and Aboriginal communities take different forms, in an effort to accommodate the unique needs, capacities, and situations of individual Aboriginal communities in the context of available opportunities.

The implementation of condition #34 may include the involvement of individual Aboriginal communities or groups of communities with common interests situated in a common geographic area.

In its decision, the EA Board ordered the MNR to build upon initiatives already underway and to provide new opportunities for Aboriginal communities to benefit from forest management activities in their local areas.

MNR implements condition #34 in a manner consistent with the CFSA, which provides legislative authority to the MNR for the sustainable management and use of forest resources. The CFSA has enabled the MNR to put mechanisms in place that may assist in facilitating the implementation of condition #34.

While responsibility for implementation of condition #34 rests with the MNR, the EA Board recognized that the involvement of other parties is critical to successful implementation. Such involvement would include participation of Aboriginal communities, the forest industry, and other government bodies (e.g., Ontario ministries, Indian and Northern Affairs Canada, and Natural Resources Canada).

Participation in forest management and economic development activities is summarized under four categories: access to resources, role in planning and management, silvicultural opportunities, and training and development.

Access to Resources

Aboriginals are often in a position to operate as forest harvesters. Although Ontario's wood supply is almost completely allocated to SFL holders, the MNR has helped the industry and Aboriginal communities negotiate access to resources. For example, harvest opportunities are made available through overlapping licences issued to First Nations.

Role in Planning and Management

MNR districts have sought out effective forums for Aboriginal communities to have a greater say in the planning and management of nearby forest resources. It is mandatory for FMPs to include a detailed Aboriginal Background Information Report and Aboriginal Values maps. Districts have provided financial assistance to some communities either to prepare these components themselves or to hire archaeological research contractors.

In many districts, Aboriginals are represented together with industry and government on forest management planning teams.

Silvicultural Opportunities

Forest renewal and tending includes growing trees, planting, seeding, spacing, cleaning, thinning, and site preparation. Many Aboriginals have experience in some silvicultural activities and district managers have sought specific agreements between industry and Aboriginals to detail the type and scope of contract work that can be made available. This work, taken together, can contribute to an effective economic development program.

Training and Employment

Although the MNR does not have a training mandate, district managers have found ways to help coordinate existing federal and provincial programs to assist Aboriginal communities in preparing for increased participation in forest management activities.

On a local level, districts have provided hands-on training for many years through the Native Internship Program and Sault College's Aboriginal Resource Technician Program.

In some districts, the forest industry provides the training strategy, recruitment and hiring support, and business opportunities for independent contractors. In some instances, the MNR is helping to establish Aboriginal training centres by providing facilities, equipment and leadership. For many years MNR districts have been providing opportunities for joint projects with Aboriginals, by providing training, funding, facilities, and equipment.

District Progress

The MNR is required to report on the progress of negotiations under condition #34 for each district. Of the 26 MNR districts, four are outside the Area of the Undertaking (AOU), including Aylmer, Aurora, Cambridge, and Midhurst. Highlights of the benefits provided to Aboriginal communities in 2004-05 for each MNR district follows.

Algonquin Park

Management unit: Algonquin Park Forest

There are no Aboriginal communities situated within the Algonquin Park Forest. However, Algonquin Park is part of the traditional territory of several Algonquin communities located near the provincial park, including Mattawa-North Bay, Pikwakanagan (formerly Golden Lake), and Whitney. Portions of the park are also included in the Robinson-Huron Treaty and Williams Treaty areas.

Extensive consultations continued with these First Nations groups as part of the implementation of a Memorandum of Understanding (MOU). Opportunities related to harvest, silviculture and road works were discussed. Three communities completed Background Information Reports in support of the 2005 FMP.

Harvesting activities in 2004-05 included the harvest of 76,000 m3 of wood by three communities. Harvest contractors within the district employ approximately 27 Aboriginal employees.

Aboriginal contractors were actively involved in silviculture activities including:

- 3,500 hectares of tree marking;
- 19 hectares of hardwood stand improvement, and
- Production of 50,000 seedlings for planting.

Active involvement in training and development activities also occurred during the year.

Bancroft District

Management units: Bancroft-Minden Forest and parts of Mazinaw-Lanark Forest

There are no Aboriginal communities in the Bancroft District. However, the Algonquins have satellite communities in the Ardoch, Bancroft, Sharbot Lake, and Whitney areas, and the Pikwakanagan First Nation at Golden Lake also has interests in the district.

Discussions have been carried out between the Bancroft Minden Forest Company Inc. and various Aboriginal groups, communities and individuals. The MNR utilizes a Regional Liason officer and a district staff person to facilitate contact with local Aboriginal groups. There are currently two representatives on the LCC for Mazinaw-Lanark and there is an open LCC seat for a representative of the Bancroft Minden First Nation. There is also one member on the FMP planning team.

Approximately five Aboriginal persons are working in the logging industry and approximately three are employed to do silvicultural work, cruising, prescriptions or tree marking. A number of Aboriginal people also work in area mills. There were no new licences issued during the year. However, the Algonquins of Whitney have a share of harvest rights to approximately 140 hectares every 5 years.

Both the MNR and the forest industry have been supportive of educational and developmental activities including:

- six Aboriginal members attended a raptor/nest identification course put on by Mazinaw-Lanark Forest Inc, and
- Aboriginal communities have been invited to participate in tree marking and forest operations training.

Chapleau District

Management units: Superior and Pineland-Martel Forests

The Brunswick House, Chapleau Cree, Chapleau Ojibway and Michipicoten First Nations are the four local Aboriginal communities with reserves lands located in the Chapleau District. In addition, the communities of Flying Post, Mattagami, Missanabie Cree, Mississauga and Sagamok Anishnawbek all have traditional areas of interest within the district.

MNR, the forest industry and local Aboriginal groups continue to foster communication with each other. In November 2004, MNR initiated the formation of a First Nation Task Team to increase awareness and involvement in the FMP process and to support both the Superior and Pineland-Martel FMPs. There were 4 active members on the Task Team. Two communities had membership on the LCC teams. However, the LCC teams were abandoned because the First Nation Task Team was their preferred venue and most of the communities in the district participate in this task team.

Tembec Industries Inc. hired a Manager of Aboriginal Development and created an internal Aboriginal Task Force to deal with Aboriginal concerns. Domtar Inc. has financially assisted and supported one community in the proposed development of a cedar mill project in Chapleau. This included a tour of an existing cedar mill in Quebec. MNR sponsored training opportunities that occurred for the representatives to the FMP Task Team. During the year this training included GIS training, and FMP related training. A workshop sponsored by MNR and facilitated by an Aboriginal woman that dealt with me-

dicinal plant usage was attended by MNR, Industry and Aboriginal participants.

Several employment contracts held by Aboriginal companies over the course of the year included: air photo interpretation, inspections, road works, and inventory work.

Cochrane District

Management units: Cochrane-Moose River Management Unit, and Iroquois Falls and Smooth Rock Falls Forests

There are nine Aboriginal communities which fall within or have portions of their traditional territories in the Cochrane District. From north to south these are Fort Severn First Nation, Weenusk First Nation, Attawapiskat First Nation, Fort Albany First Nation, Kashechewan First Nation, Moose Cree First Nation (MCFN), Mocreebec Council of the Cree Nation, Taykwa Tagamou Nation (TTN) and Wahgoshig First Nation. Only Taykwa Tagamou Nation, Moose Cree First Nation and Wahgoshig First Nation (WFN) have all or a portion of their traditional territories within the Area of Undertaking.

Involvement in forest management planning included the active participation of 4 Aboriginal members in FMP teams, and ongoing discussions with communities directed towards increasing participation in forest management planning. The Forest Industry has staffed positions and created a task force to address Aboriginal Concerns.

Various agreements within the district provide opportunities for groups to harvest timber including:

- overlapping agreements allowing the harvest of 65,000 m3 by two communities;
- direct licensing of 123,000 m3 of harvest to two communities, and
- contract harvest of approximately 233,000 m3 of timber by Aboriginal contractors working directly with the Forest Industry.

Employment efforts included ongoing discussions related to groups obtaining silviculture, tending, and harvesting contracts. Employment opportunities in the district included:

- tree planting;
- air photo interpretation;
- woodlands employment;
- slash pile burning, and

Both the MNR and the forest industry have provided funding for a variety of educational and developmental activities including:

- financial assistance for training and education;
- funding for qualifying people attending College and University programs;
- work opportunities to enhance educational experience;
- support for the Junior Ranger Program at Guilfoyle Lake near Kapuskasing attended by18 youth, and
- financial support for a number of social and cultural events.

Dryden District

Management units: Dryden, Wabigoon, and English River Forests

The Eagle Lake and Wabigoon Lake First Nations are located in the Dryden District. The Grassy Narrows, Lac Seul, Ojibway Nation of Saugeen, Wabauskang, and Naotkamegwanning Anishinabe (Whitefish Bay) First Nations are other communities with interest or ongoing activities in the district.

Communication efforts between the district and local Aboriginal groups continued through 2004-05. This included efforts to solicit active involvement in the FMP process. In addition, the forest industry also undertook communication efforts including participation in a public advisory group related to Weyerhaeuser Company Limited's forest certification system. Discussions occurred through the FMP process to identify potential Aboriginal values on the English River Forest.

Aboriginal groups in the district were also active in harvesting activities during the year. Timber harvest activities included:

- allocation of 3 timber harvesting licences with an allocation totalling approximately 30,000 m3, and
- contract harvesting of timber for the forest industry by two groups with a total havest volume of approximately 100,000 m3.

These timber harvesting opportunities provided employment for approximately 30 people. Attempts

by communities to become part owners of the company holding the SFL on the Dryden Forest did not materialize in the current year.

Silviculture opportunities were also available during the year including:

- the production of seedlings for planting, and
- pre-commercial thinning of 183 hectares.

Training opportunities were provided through a youth program which provided summer employment for a total of 8 youth, and through a First Nation Ranger Program which provided opportunities for 2 other individuals.

Fort Frances District

Management units: Sapawe and Crossroute Forests

The Aboriginal communities located in the Fort Frances District are Big Grassy, Anishinaabeg of Naongashiing (Big Island), Couchiching, Lac La Croix, Naicatchewenin, Nicickousemenecaning, Rainy River, Seine River and Stanjikoming. The Naotkamegwanning Anishinabe (Whitefish Bay) and Ojibways of Onegaming First Nations are located outside of the district, but their traditional territories extend into the district. Lac des Mille Lacs First Nation has an uninhabited reserve adjacent to the Sapawe Forest. Lac Des Mille Lacs First Nation and Wabigoon Lake First Nation are also interested in being involved with the forest management planning process.

The MNR and forest industry have continued to offer to help facilitate opportunities within the context of condition 34 in the district. These opportunities included an invitation to participate on the Sapawe FMP planning team, and the discussion of values collection.

Aboriginal groups in the district were also active in harvesting activities during the year. Timber harvest activities included:

- allocation of 10 licences for timber harvesting (approximately 180,000 cubic meters), and
- 4 contract harvesting opportunities in partnership with the forest industry (approximately 60,000 cubic meters).

All of these opportunities occurred on the Crossroute Forest. On the Sapawe Forest, there were no licences issued with Aboriginal communities because presently the full allowable harvest is allocated. A number of Aboriginal people with the majority of them living in or near the community of Atikokan, earn a livelihood from the forest by working in area mills, woodlands operations, or other forestry related occupations.

Other types of forest management related employment also occurred during the year, including:

- tree planting;
- site preparation;
- thinning;
- slash pile burning;
- cone collection, and
- road construction/maintenance.

Hearst District

Management units: Gordon Cosens and Hearst Forests

Constance Lake is the only Aboriginal (CLFN) community located in Hearst District. The Hornepayne, Moose Cree and Taykwa Tagamou First Nations also have interests within the district.

All of these communities have been contacted and participate, to varying degrees, in forest management activities. CLFN participated on the 2007 Hearst forest management planning team during the 2004-05 year. Meetings and workshops have taken place in the community to explore the topics of interest to CLFN.

The logging company Mammamattawa Inc. has been operating in the district for 8 years. In the summer of 2004 an agreement was reached between the company and the Industrial, Wood and Allied Workers of Canada (IWA). A second company active on the Gordon Cosens Forest has been involved in discussions with Tembec Inc. to pursue harvesting opportunities for under-utilized species.

Three Aboriginal logging companies are active within the district harvesting timber under licence or contract for local mills as follows:

- A licence for the harvest of 13,030 m3 from the Hearst Forest;
- An overlapping licence to harvest 2,325 m3 of cedar from the Gordon Cosens Forest, and

- Contracts to harvest approximately 113,000 m3 of timber for the Forest industry.

Total Aboriginal employment in logging, mills and transportation is estimated at 95 persons. Tembec Inc. has formed an Aboriginal task force to explore potential employment opportunities. Other employment opportunities within the district include tree planting, slash burning and thinning contracts.

Tembec Inc. in partnership with Outland Reforestation Inc., Confederation College, and the MNR launched a First Nation Forestry Youth Employment Program in 2003/04. This year the program continued with a number of youths participating in the four-week training program. In addition, a number of training and development workshops were held during the year.

MNR and CLFN have established a partnership to build a destination tourism center that will market Native culture. Construction on the $10 million center began in November 2004 and is scheduled to be completed in the spring of 2006.

Kemptville District

Management units: parts of Mazinaw-Lanark Forest

The Mohawk Council of Akwesasne and the Algonquins of Ottawa and Sharbot Lake hold regular discussions about forest management opportunities. The district continues to encourage and support these efforts to become more involved in the forest industry.

There were no contracts, licences or allocations designated in this district during 2004-05.

Kenora District

Management units: Kenora and Whiskey Jack Forests

The 12 Aboriginal communities located in the Kenora District are: Ochiichagwe'Ba bigoining (Dalles), Grassy Narrows, Northwest Angle #33, Northwest Angle #37, Ojibways of Onegaming, Iskatewizaagegan #39, Shoal Lake #40, Wabaseemoong, Wabauskang, Washagamis Bay, Wauzhushk Onigum and Naotkamegwanning Anishinabe (Whitefish Bay). Big Grassy and Big Island First Nations are located in the Fort Frances District, but have reserve lands and an interest in resource planning in the Kenora District.

The district organized a number of information centers in support of FMP planning activities. Invitations to participate in the FMP process were extended to the groups in the district. In January 2005, a values collection survey was initiated by Wabaseemoong Independent First Nations with funding support from MNR.

Timber harvesting opportunities are limited in the district because the allowable cut of conifer is fully allocated. Three groups have access to forest resource licenses.

Employment opportunities and related training for individuals in the Weyerhaeuser-Trus Joist mill were provided in the current year. Also, funding was provided to the Anishinaabeg of Kabapikotawangag Resource Council Inc to initiate 'Interest Based Negotiation Training' for community leadership that could assist with forestry negotiations.

Kirkland Lake District

Management units: Timiskaming Forest and part of the Iroquois Falls Forest

There are two Aboriginal communities (Wahgoshig and Matachewan), and one Aboriginal community (Beaverhouse) located within the Kirkland Lake District. The Temagami and Mattagami First Nations are located outside of the district, but these communities have expressed an interest in forest management within the district.

Discussions involving the MNR, forest industry and First Nations have focused primarily on silvicultural opportunities potentially leading to harvesting contracts. A long term agreement is in place with Abitibi, Wahgoshig (WFN) and the MNR to address social, cultural and economic concerns on the Iroquois Falls Forest. The MNR has been working with Grant Forest Products Inc., Liskeard Lumber Ltd., Cheminis Lumber Inc., Rosko Forestry Operations Ltd., W. Paiement & Sons, Domtar Inc., G. Woollings, and Norbord Industries Inc. to identify potential opportunities for working with local Aboriginals. Two liaison positions have been partially

funded within the district in an effort to improve communications.

Aboriginal groups have been actively involved in harvesting timber in the district during 2004-05. Harvesting activities included:

- A partnership with Tembec to harvest 125,000m3 on the Nighthawk Forest; and
- A horse logging operation on the Timiskaming Forest that harvested 2,200m3.

A number of silviculture activities occurred during 2004-05 including:

- four tree planting contracts involving the planting of approximately 1.5 million seedlings in total, and
- three pre-commercial thinning projects which treated an area of approximately 600 hectares.

Combined, these silvicultural opportunities provided employment for approximately 75 people. One road maintenance contract was also awarded to an Aboriginal group during the year.

A working partnership agreement between Abitibi, Wahgoshig and the MNR provides targets for training opportunities including cash for training, education, and youth development. An agreement between Tembec and Wahgoshig has provided training opportunities and has lead to training and hiring of 2 Supervisors for harvesting, and 2 in-house training specialists.

Nipigon District

Management units: Lake Nipigon, Kenogami, Ogoki, Pic River Ojibway Forests, and parts of the Black Sturgeon and Lakehead Forests.

The communities located in the Nipigon District are Animbiigoo Zaagi'igan Anishinaabek, Aroland, Biinjitiwabik Zaaging Anishinabek, Eabametoong, Ginoogaming, Kasabonika Lake, Long Lake #58, Marten Falls, Neskantaga, Nibinamik, Ojibways of the Pic River, Pays Plat, Red Rock, Sand Point, Wawakapewin and Webequie First Nations. However, Kasabonika Lake, Neskantaga, Nibinamik, Wawakapewin and Webequie First Nations are north of the AOU. The Constance Lake, Fort William, Kaishke Zaaging Anishinaabek (Gull Bay) and Whitesand First Nations have traditional lands within the Nipigon District. Discussions were also initiated with the Namaygoosisagagun during 2004-05.

A number of activities occurred during the year to enhance communications within the district. During the year, 3 agreements were reached to produce Aboriginal values maps and background reports on the Black Sturgeon Forest, however, on the Kenogami Forest values data collection fell behind schedule. Members continue to actively participate on the Local Citizens Committee and FMP planning teams for the Lake Nipigon, Black Sturgeon and Pic River Ojibway Forests. Information related to planning and operations was made available to all communities. The forest industry also continues to play an active role in communicating with various Aboriginal groups. Discussions included: concern about logging adjacent to reserves; opportunities to bid on silviculture and timber harvesting contracts, and timber salvage from blowdown and burned areas.

Aboriginal groups have been actively involved in harvesting timber in the district during 2004-05. Harvesting activities included:

- A licence to harvest 1,001,700 m3 from the Black Sturgeon Forest was issued, and harvest was started with 229,712 m3 harvested during the year,
- An opportunity to harvest 75,000 m3 from the Kenogami forest was made available;
- Three logging operations on overlapping licences in the Lake Nipigon Forest continued;
- Salvage operations were completed for timber burned on Nipigon fire 58;
- Approximately 36,900 m3 of timber was harvested by one group on the Ogoki Forest;
- A First Nation harvested timber along a realigned road corridor leading to their reserve, and
- Three licences held by Aboriginal groups were active on the Pic River Ojibway Forest with an estimated harvest volume of 105, 289 m3 and a salvage volume of 75,000 m3.

In addition, private land harvesting and contract harvesting for the forest industry by Aboriginal loggers occurred on the Lake Nipigon and Ogoki Forests.

Other forest management related activities included:

- contracts for pre-commercial thinning, debris piling, site preparation (750 hectares), juvenile spacing (208 hectares) and tree planting (1.4 million seedlings) on the Black Sturgeon Forest;
- opportunities to bid on silviculture and transportation contracts on the Kenogami Forest, and
- contracts for tree planting (totalling approximately 560,000 seedlings), and road building on the Lake Nipigon Forest.

Training and educational opportunities for groups in the district included:

- a continuation of Bowater's First Nation Ranger Program;
- Information Centers associated with the FMP under development on the Black Sturgeon and Kenogami Forests, and
- a program of joint MNR/Aboriginal inspections that provides an 'on the ground' training opportunity.

North Bay District

Management units: Temagami Management Unit, Nipissing Forest

The Antoine Algonquin, Dokis, Mattawa-North Bay Algonquins, Nipissing, and Temagami First Nations have communities located within the North Bay District.

In this fiscal year the MNR organized six meetings with local groups. Communications efforts focussed on forestry opportunities and challenges faced by these groups. Communication with the Forest Industry also took place with an emphasis on value added products and non-timber forest products.

The Temagami First Nation had an active member on the local citizens committee and a second first nation member from the Antoine Algonquin First Nations sat on the LCC to represent the interests of all the local communities. In addition all 5 of the Aboriginal groups have representatives on the forest management planning team.

During 2004-05, active involvement in timber harvesting including:

- Dokis First Nation overlapping licence for 13,668 m3;
- Nipissing First Nation overlapping licence for 23,500 m3;
- Mattawa-North Bay Algonquins overlapping licence for 18,545 m3;
- Antoine First Nation overlapping licence for 10,310 m3, and
- Temagami First Nation FRL for 5,945 m3 on the Temagami Management Unit.

In addition to timber harvesting, members of the local communities were also involved in a number of other economic undertakings including stand tending work on 729 hectares and a regeneration assessment contract. A total of 1,200 hectares of plantations and naturally regenerated areas were assessed.

Educational opportunities in the district included:

- a 3 day spring compliance training course by members from the Antoine First Nation, Mattawa-North Bay Algonquins, Dokis First Nation and Nipissing First Nation;
- participation in forest certification annual surveillance audit by representatives from the Mattawa-North Bay Algonquins and the Antoine First Nation, and
- a GIS project to confirm and map Aboriginal values sites.

Parry Sound District

Management unit: French-Severn Forest

The French-Severn Forest is home to six Aboriginal communities, with a seventh community directly bordering the unit. Five communities are Ojibway, and fall under the Robinson-Huron Treaty, they are Henvey Inlet, Magnetawan, Shawanaga, Wasauksing and Dokis (borders the unit). Moose Deer Point First Nation are Pottawatomi Nishinabe and Wahta are Iroquois/Mohawk. The Algonquins of Pikwakanagan (Golden Lake), which are not inside this management unit, have some involvement in the forest management planning process.

Westwind Forest Stewardship Inc. (Westwind), the local SFL holder, has been actively involved in increasing awareness within Aboriginal communities of the opportunities in the local forest industry for local people, and facilitating their involvement. In the last year, Westwind has held 20 meetings with local groups, and have been actively engaging the local communities. These meetings range from meetings with individual communities, to meetings between overlapping licensees with First Nations Initiatives of their own. An individual is currently being sought to fill a place on the Local Citizens Committee. A member was appointed to the Westwind Forest Stewardship Board of Directors. Two temporary positions within the MNR have been created in 2004-05 including a Native Compliance Technician, and a Resource Liaison Officer. The latter position is intended to develop relationships with Aboriginal Communities, and to facilitate involvement in Natural Resources Management activities.

Currently, Aboriginal groups do not hold any licences for timber harvest in the district, and did not participate in silviculture opportunities in the last year.

Several training and development opportunities have been undertaken to stimulate increased participation in forest management activities including:

- training of one individual as a certified seed collector, and
- cultural awareness training for MNR, Forest Industry, and Aboriginal members.

Pembroke District

Management unit: Ottawa Valley Forest

There are several Algonquin communities within the Pembroke District. The Algonquins of Pikwakanagan at Golden Lake is the only Indian Reservation designated under the Indian Act. However, there are several off-reserve Algonquin communities in the district. These communities are contained within established communities including Golden Lake, Pembroke and Renfrew.

Efforts were undertaken to engage local communities in the forest management planning process. The FMP process for the 2006 plan is ongoing with the participation of 4 groups. Aboriginal values and background reports supporting the FMP process were started in 2004-05.

Aboriginal harvesting operations were inactive in the district during 2004-05 as a replacement for a sensitive area originally planned for logging was sought. Harvesting is scheduled to re-start in 2005-2006. Other forest management activities included stand improvement and timber cruising.

Red Lake District

Management units: Trout Lake, Red Lake and Whiskey Jack Forests (Management for the Whiskey Jack Forest is administered by Kenora District)

The Deer Lake, Keewaywin, McDowell Lake, North Spirit Lake, Pikangikum, Poplar Hill, and Sandy Lake First Nations are located in the Red Lake District. All seven communities are remote, with winter access only, and are not located within designated forest management units. However, forest operations are carried out within the traditional use areas of the Cat Lake, Pikangikum, Wabauskang, Slate Falls, Grassy Narrows, and Lac Seul First Nations, as well as the local Aboriginal people living off reserve in the communities of Red Lake and Ear Falls.

Communication efforts by both the MNR and the forest industry continued during 2004-05. Communication efforts focussed on planning and economic opportunities.

Timber harvesting related opportunities in the district included:

- Planning continued with Pikangikum First Nation regarding the development of a SFL through the Northern Boreal Initiative (NBI). In addition, the MNR is working in partnership with Pikangikum First Nation on the Whitefeather Forest planning initiative, a community based land use strategy that will include forestry as a land use. A draft of the land use strategy and GIS information base were completed in 2005;

- A group has two overlapping licences on the Whiskey Jack Forest with a total allocation of 33,198 m3.
- An estimated 30 people are actively involved in the harvest of timber within the district, and an additional 12 are employed at area sawmills.

In addition one group has an ongoing road maintenance contract which employs 3-4 persons.

Training and development activities undertaken in the district in 2004-05 included:

- hands on training/work experience programs in data collection, sturgeon radio tagging, and caribou calving inventory projects, and
- a two day forestry workshop and site visit session for approximately 24 persons.

Sault Ste. Marie District

Management units: Algoma Forest and parts of Northshore Forest

The Garden River, Mississauga, Ojibways of Batchewana, Serpent River, and Thessalon First Nations are located within the Sault Ste. Marie District. The North Shore Tribal Council is also active within the district.

During 2004-05 the MNR and Forest Industry continued to communicate with local communities about forest management issues. Specific activities included:

- five sessions to review values collected through the FMP process were held;
- eight FMP open houses were held;
- initiated bear wise programs with four communities, and
- discussions continued in relation to two areas of interest (a proposed conservation reserve and a park).

Harvesting activities included: two licences on the Northshore forest to harvest approximately 54,000m3. A group harvest approval was given to a group representing 10 First Nations for an additional 23,400 m3.

In 2004-05 other economic opportunities included:

- a cone collection contract for 66 hl of cones, and
- silviculture contracts for tree planting (580,000 trees), manual and chemical cleaning (195 hectares), and pre commercial thinning (100 hectares).

All required training for an Aboriginal Deputy Conservation Officer for the Mississauga First Nation was completed in 2004-05. A Deputy Conservation Officer was appointed.

Sioux Lookout District

Management units: Caribou and Lac Seul Forests

There are 14 communities situated in the Sioux Lookout District, of which only four (Lac Seul, Slate Falls, New Slate Falls, and the Ojibway Nation of Saugeen) are located within the AOU. Mishkeegogamang and Cat Lake are adjacent to these forests and have some of their traditional lands within the AOU.

In 2004-05 discussions continued related to the implementation of forest management plans in the district. Local issues discussed included:

- the construction of an all weather road to the community of Slate Falls;
- harvesting operations in the vicinity of Slate Falls;
- a management plan for reserve lands at Lac Seul;
- a deferral of allocations in several areas of concern, allowing for additional time to discuss the implications of the planned treatments, and
- opportunities for participation in forest management and economic opportunities.

Ojibway Nation of Saugeen does not recognize the MNR FMP process and will not participate in discussions with MNR on this topic. Bowater met with the Saugeen Chief and Council to keep the community informed of forest operations.

Aboriginal involvement in timber harvesting in the Sioux Lookout district included:

- the ongoing harvest of timber by the Lac Seul First Nation under a licence;
- two members work on contract harvesting crews for the forest industry, and

- the Saugeen First Nation advised the forest industry that they did not wish to proceed with the contract harvest of an area.

Employment opportunities included employment opportunities with the forest industry and work in woodlands operations, road maintenance, operation of a ferry service and in an area sawmill.

Training opportunities in the district included:

- a silviculture worker program developed by the forest industry. This year six members participated in operational training for juvenile spacing, and
- participation in the industry sponsored First Nations Ranger Program. Members from two communities were involved in the program.

Sudbury District

Management units: Sudbury and Spanish Forests and part of the Northshore Forest

The ten communities within Sudbury District are: Zhiibaahaasing, Sagamok Anishnawbek, Sheguiandah, Sheshegwaning, Ojibways of Sucker Creek, Wahnapitae, M'Chigeeng, Whitefish Lake, Whitefish River, and Wikwemikong. Adjacent communities of Henvey Inlet and Dokis First Nations are active in the district.

All of these communities participate in discussions with the district and SFL holders. Communication efforts included:

- opportunities for members to participate in three Local Citizens Committees;
- 5 information sessions and a field tour of operations;
- invitations to participate in FMP planning teams, and
- opportunities to participate in forest management activities, including a process to develop prescriptions for the protection of Aboriginal values.

Community members were also active in forest harvesting during the year. Activities included harvesting on 4 licenses within the district, totalling approximately 80, 000m3. In addition, an allocation was made to a group representing 10 communities for the harvest of 23,400 m3 on the Northshore Forest.

In addition to harvesting work, members also participated in silviculture activities in the district. Silviculture work included the planting of approximately 2.4 million trees, manual and chemical cleaning of 135 hectares, and approximately 800 hectares of pre commercial thinning.

Training efforts in the district included support for 4 members to attend a tree marking course, and 2 members to attend a forest certification compliance course.

Thunder Bay District

Management units: Armstrong Forest, Brightsand Forest, Dog River-Matawin Forest, Lakehead Forest, Spruce River Forest and part of the Black Sturgeon Forest

The four First Nations located within Thunder Bay District are Fort William, Whitesand, Lac Des Milles Lacs and Kiashke Zaaging Anishinaabek (Gull Bay). In addition, a number of Aboriginal communities, including the Red Rock First Nation, Namaygoosisagagun (Collins community), and the Thunder Bay Council of the Metis Nation of Ontario, have been involved in forest management within the district.

A variety of communication efforts continued through 2004-05. Four of the seven communities with an interest in the district had representatives on the Local Citizens Committee. There were also four representatives present on FMP planning teams within the district.

Local groups participated in timber harvesting operations including:

- a large number of overlapping licences with a total volume of approximately 235,000 m3. The Whitesand First Nation operating on the Armstrong Forest, held the largest number of overlapping licences (200,000m3), and
- a number of agreements for contract harvest of timber for the forest industry were also in effect during the year.

It is estimated that approximately 40 individuals are employed in mills and woodlands operations within the district.

In 2004-05 other economic opportunities included:

- tree planting contracts for approximately 740,000 seedlings;
- a site preparation project on 733 hectares;
- thinning and juvenile spacing contracts on approximately 100 hectares, and
- a road location project.

A number of education and training initiatives were undertaken in the district during the year including:

- financial support for an individual to attend the forest technician program at Confederation College;
- on the job training programs developed and implemented by the forest industry;
- the establishment of an operational silvicuture training program, and
- the continued operation of the First Nation Ranger program. This year, the program employed 30 youth from 9 communities.

Timmins District

Management units: Romeo Malette, Shining Tree and Nighthawk Forests and portions of the Pineland and Spanish Forests

Mattagami is the only First Nation in the district. Flying Post First Nation is also within the Timmins District boundary but all residents live off-reserve, in Nipigon. Other interested First Nations include Matachewan, Moose Cree, Wahgoshig, Wahnapitae, Whitefish Lake, Sagamok and Taykwa Tagamou.

Several communities participated on the Nighthawk Forest Management Planning Team including: Mattagami, Matachewan, Taykwa Tagamou, Wahgoshig and Moose Cree. Several communities also participate in the current planning process for the Timiskaming and Shining Tree Forest including Mattagami, Matachewan, Wahgoshig,Beaverhouse Aboriginal Community, Wahnapitae, Sagamok, Whitefish Lake, Temagami and Temiskaming. A First Nations Advisory Committee was established for the Shining Tree Forest to complement the planning team. This committee provides a forum for First Nations to discuss issues and concerns and provide positive suggestions for improvement and change to the planning process.

The forest industry remains engaged in discussions with various communities in the area. Tembec has staff dedicated to communications and has a number of initiatives currently underway. The forest industry has also provided funding to assist collecting cultural heritage values information.

Aboriginal groups are involved in timber harvesting in the district including licences to harvest approximately 200,000 m3 of timber that employs approximately 50 people. In addition to timber harvesting, local groups have been involved in silviculture (precommercial thinning of 250 hectares and site preparation of 102 hectares).

A number of training activities were undertaken over the year including:

- a career development day at the Mattagami First Nation;
- the development of a GIS system available for all local groups to record values informa-tion. Associated with this undertaking MNR has sponsored the training of a GIS technician and provided technical support and equipment;
- a workshop for local trappers, focusing on the certification of Aboriginal trappers, and
- forest industry support for education including an award program that provides funding for university and college students. The forest industry also hired two individuals in an effort to provide operational experience that compliments their educational experiences.

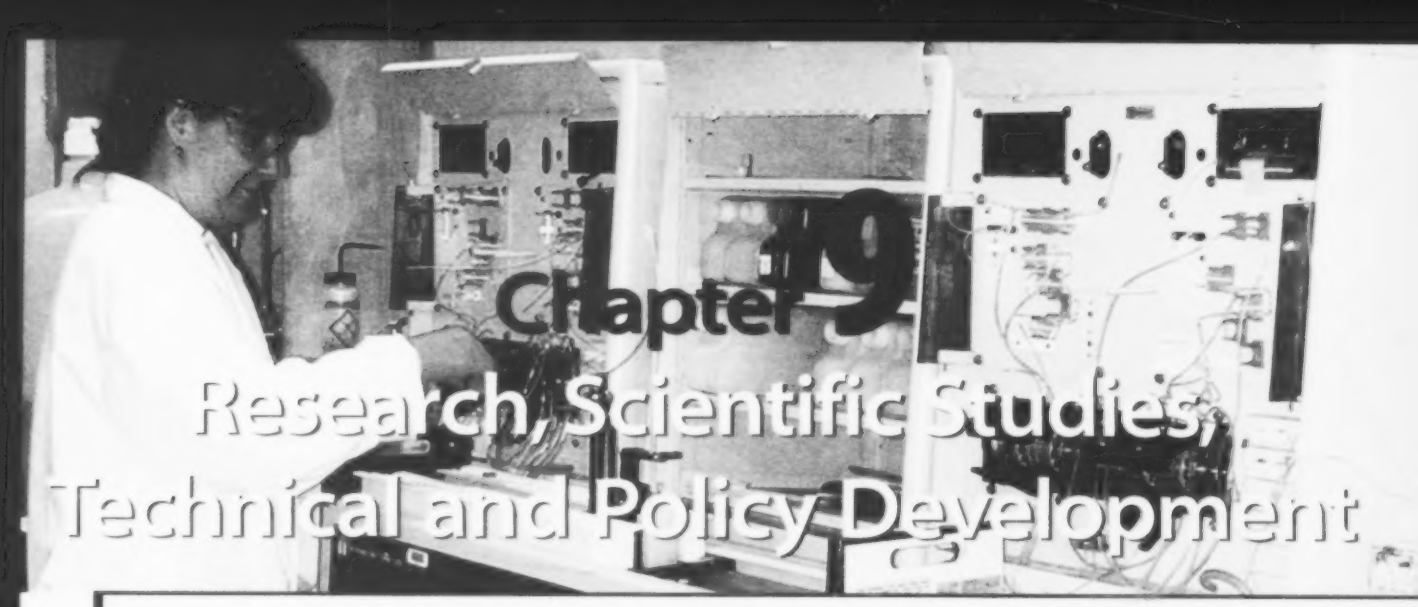
Wawa District

Management units: Big Pic, Black River, Magpie, Nagagami, Wawa and White River Forests

The four First Nations located in the Wawa District are Hornepayne, Michipicoten, Pic Mobert, and the Ojibways of the Pic River. Ginoogaming, Long Lake No. 58, Constance Lake and Missanabie Cree First Nations have traditional lands in the Wawa District and have an interest in forest management within the district.

Ongoing discussion occurred throughout the year with local groups to discuss opportunities for participation in Forest Management activities within the district. The Forest Industry has also actively communicated with groups on subjects such as harvesting and silviculture opportunities. Two groups have members on FMP planning teams and participate in consultation processes. A workshop was held in Wawa with all First Nations in and adjacent to the district to discuss current issues and topics related to forestry that were of interest.

During the year, the Ojibways of the Pic River First Nation were involved in the harvest of 16, 850 cubic meters of timber from the Black River Forest through an Overlapping Licence Agreement and some harvest contracting opportunities on the Big Pic Forest.



Chapter 9
Research, Scientific Studies, Technical and Policy Development

The MNR keeps pace with the constantly ex panding knowledge base for sustainable for est management through research, scientific studies, and technical and policy development programs. These studies and programs span a range of subjects, including: development of new and improved data and information sources; the creation and implementation of new policies, procedures, and guidelines for forest management planning (now called forest management guides); the development of new forest management methods, models, and tools; and, continuing long-term monitoring programs and scientific studies.

This chapter highlights significant advances and milestones in scientific research, technical and policy development that the MNR has made during 2004-05, in co-operation with its partners, on specific policy development programs and technical and scientific programs. Much of the research undertaken by the MNR is ongoing, may cover subjects indirectly related to forest management, and is not reported here. For an indication of the nature of other research work undertaken by the MNR go to http://www.mnr.gov.on.ca, or refer to the research section of the CD distributed with printed copies of this report.

Provincial Wildlife Population Monitoring

Provincial wildlife population monitoring is undertaken to demonstrate that healthy populations of forest wildlife continue to occur across the AOU and to contribute to an understanding of how forest management affects wildlife populations. Wildlife population monitoring under T&C #81 of the Timber Class EA approval was initiated in 1995 through partnerships with other monitoring agencies, and in 1996 MNR established the Wildlife Assessment Program, staffing three locations in North Bay, Timmins, and Thunder Bay. The wildlife population monitoring program was reaffirmed through the Declaration Order in 2003 as Condition 30. During 2004-05, under the direction of the Ontario Terrestrial Assessment Program (the corporate home of this component of wildlife population assessment), monitoring partnerships with external parties were maintained and implementation of its monitoring approach continued across the AOU.

Wildlife Assessment partnership activities included ongoing support for Bird Studies Canada (BSC), to monitor forest bird migration, owls, and red shouldered hawks, as well as support for the University of Guelph's long-term small-mammal monitoring in Algonquin Park. By contributing data, support also continued for the second *Ontario Breeding Bird Atlas*.

The Wildlife Assessment Program completed the final year of a three-year pilot study on small mammals, forest birds, and amphibians across a network of 180 randomly selected, geographically distributed, permanent sample sites representative of major forest types. The purpose of this pilot study is to evaluate this type of monitoring survey across broad

geographic regions of Ontario. The intent is to implement full-scale surveys that will provide results for the selected species groups that are representative of the areas monitored. Preliminary results indicate that for forest birds and small mammals the surveys were able to detect significant trends for several species. Data analysis is ongoing. The furbearer distribution and relative abundance trapper mail survey was also continued. Staff completed a review to examine the program's direction, priorities, and approaches and produced a Wildlife Population Program Monitoring Plan in June 2004.

In 2004-05 the Wildlife Assessment Program, through the Ontario Terrestrial Assessment Program, continued work to maintain a central database as a repository for program data, and provide other researchers the opportunity of accessing and sharing this data.

Silviculture Practices

In cooperation with a number of non-government organizations, forest industry, university, college, and federal government partners, the Ontario Ministry of Natural Resources is comparing the effects of natural forest disturbance with those resulting from a range of silviculture practice intensities throughout the boreal and Great Lakes-St. Lawrence forests of Ontario. This research project is known as the NEBIE Plot Network.

The acronym NEBIE stands for natural disturbance and increasing levels of silvicultural intensity (extensive, basic, intensive and elite). Where intensities are a function of four independent factors: 1) species and genetic composition of a stand, 2) resource (light, water, and nutrient) allocation to desired tree species; 3) protection from fire, herb-ivory, insects, disease, and severe weather and 4) utilization. The least control of these factors is expressed at the extensive level and the greatest at the elite level.

The objectives of the NEBIE Plot Network are to:

- Determine the effects of natural disturbance and silvicultural practices on tree survival, growth, wood quality, and genetic diversity;
- Monitor the effects of silvicultural practices on microclimate, soil moisture and nutrient cycling, vegetation diversity, and wildlife habitat, and
- Develop a defensible database to accurately forecast allowable cut while maintaining ecological and economic viability.

This research will help resource managers to: maintain or enhance fibre quantity and quality; maintain soil and water resources; conserve biological diversity; reduce the risk of losses to fire, insects, and diseases, and maintain economic sustainability.

By March 2005, the network of 160 two hectare plots from eight locations across Ontario was completed; 64 of the 128 plots scheduled to be harvested had been harvested and 32 plots had received silvicultural treatments. Pre-harvest surveys for timber, regeneration, floral diversity, downed woody material, and organic matter were completed for all but 1 of the 8 installation sets. Pathology and detailed soils information had been collected for 3 of the 4 sites scheduled for these surveys. Second-year post-harvest surveys which included a full compliment of data collection were completed for two installation sets. Fact sheets in French and English had been prepared and a number of on site field tours had been conducted.

OTHER POLICY RELATED ACTIONS DURING 2004-05

In April 2004 the Ontario government added protection for four more species at risk. The four newly regulated plant species are the Western Silvery Aster, False Hop Sedge, Skinner's Agalinis and Virginia Goat's-rue. These plant species are found in only 11 known locations in Ontario, and are at risk of extinction. With the addition of these four, 40 plant and animal species are now regulated under Ontario's *Endangered Species Act*. The Act prohibits harming of regulated species or their habitats.

In May 2004 the Ontario government protected the Eastern Wolf by banning the hunting, trapping and chasing of wolves and coyotes in and around Algonquin Provincial Park. The park is the largest protected area for the Eastern Wolf in North America. In March 2005 Ontario also introduced a new closed season for hunting and trapping wolves in central and northern Ontario.

Forest Management Guide Progress

In 2000-01, MNR hired a group of independent consultants to review all existing forest management guides and provide recommendations to maintain their effectiveness while improving their efficiency. The resulting report contained 80 recommendations, with a key recommendation to reorganize and amalgamate the 34 documents studied into a concise set of 6 guides. This new set would:

- retain the silviculture guides, the cultural heritage guide and the resource-based tourism guide, and
- develop 3 new guides, addressing forest management at three hierarchical scales – landscape, stand and site.

Work on the amalgamation project began immediately following acceptance of the consultants' report in 2000-01. Progress to date includes:

- a revision of the resource-based tourism guide was finalized and published in 2001-02;
- the set of silviculture guides was completed in 2003-04, and in the spring of 2005 a review was initiated to determine if revisions would be required.
- a working draft of the cultural heritage guide was prepared in 2004-05 following a series of aboriginal workshops to discuss the development of the guide.
- guide development teams continued work on both the landscape, and stand and site guides. A draft of the landscape guide was prepared for the provincial forest policy technical committee in the fall of 2005, with a target of completing a draft for EBR posting in 2007. The target completion date for the first draft of the stand and site guide is the spring of 2006.

Under condition 39c of the EA Declaration Order regarding MNR's Class Environmental Assessment for Approval for Forest management on Crown Lands in Ontario the MNR was required to develop an action plan outlining how the effectiveness of three specific aspects of the NDPEG would be monitored and assessed. In 2004-05 the action plan was completed and the condition was met. The studies described in the plan did not commence until the beginning of the next fiscal year, 2005-06, and will be described in future provincial annual reports.

Spatial Modelling to Evaluate the Effectiveness of Forest Management Guides

Spatial habitat models can help evaluate the effectiveness of forest management guides and management plan implementation. If application of a forest management guide is expected to conserve biodiversity values, then clear statements of how species will respond to particular elements of the guide are required. Models should predict what will happen to wildlife as a result of altering combinations of management factors at both stand and landscape scales.

By ensuring clear linkages are made between forest management activities and expected wildlife response, a better understanding of the consequences of policy decisions on the sustainability of wildlife values can be established in an adaptive management approach.

Landscape Scripting Language (LSL) is a multiple-scale spatial modelling tool developed at the Centre for Northern Ecosystem Research (CNFER) in Thunder Bay. Researchers at CNFER have developed and tested songbird habitat models using the LSL modelling approach, and are modelling the effects of alternative forest management policies on wildlife habitat to support MNR's landscape guide development.

LSL is also being used by the landscape guide boreal and Great Lakes St. Lawrence science teams. Models for eight mammal (deer, moose, marten, snowshoe hare, northern and southern flying squirrels, lynx, and beaver), seven bird species (pileated woodpecker, northern goshawk, spruce grouse, ruffed grouse, barred owl, red shouldered hawk, and wood duck), as well as models that identify forest composition, were implemented in the LSL language. Multiple simulated landscapes were then run through the models to estimate bounds of natural variation in habitat supply. The Landscape Guide

software tool, currently under development, incorporates LSL as its analytical engine to facilitate comparison of planned habitat availability with the natural benchmarks.

As well, CNFER researchers have developed a model viewer to visualize the relationships between forest structure variables and expected habitat occupancy.

Policy Activities

The MNR undertakes an ongoing process to review and update policies and strategies on an ongoing basis. The following highlights some of related activities that occurred throughout the year:

- *Our Sustainable Future* was released by the Ministry of Natural Resources in February 2005. This new strategic directions document helps guide the Ministry of Natural Resources and ensures sustainable development of natural resources and economic prosperity, especially in northern Ontario. It also strengthens the commitment to conserving biodiversity and green space with special emphasis on southern Ontario. The document establishes a dual focus, supporting sustainable resource development and maintaining a strong emphasis on protecting the natural environment. This focus is supported through stronger policy development and enhanced science, information, assessment and reporting;
- the MNR released its new Provincial Wood Supply Strategy in June 2004. The strategy identifies critical wood supply issues and provides recommendations for addressing them. Its aim is to sustain a continuous, predictable, long-term wood supply necessary for industrial processing facilities and to increase the level of long-term available wood supply;
- the Ontario government launched a major review of its legislation governing provincial parks, conservation reserves and wilderness areas in September 2004. Ontario has 316 parks, 249 conservation reserves and 10 wilderness areas. The province's system of parks and protected areas welcomes more than 10 million visitors a year from within Ontario and around the world;
- in February 2005 the government passed the *Greenbelt Act 2005*, which will permanently protect more than 400,000 hectares in the Golden Horseshoe area of southern Ontario. The newly protected area will be added to the protected areas of the Oak Ridges Moraine and the Niagara Escarpment to form a 730,000- hectare greenbelt area of environmentally sensitive and agricultural land; and
- in April 2004, 1,432 hectares of Crown land was added to Rouge Park in Toronto. With this expansion, the park becomes the largest natural park in an urban area in North America.

A NEW RESEARCH PARTNERSHIP

On November 17, 2004, Ontario announced its membership in the Forintek Canada Corp. partnership. Ontario will draw on Forintek's expertise to further its assessment of value-added wood product, bio-energy and bio-product opportunities. Ontario will also benefit from Forintek's ongoing research and technical advice in the wood products sector.

Provincial Growth and Yield Program

The Growth and Yield Program in Ontario is actively involved in a wide range of activities: from the collection of field data and information, to the creation of new models, guidelines, and monitoring procedures. Results from this program are extensively utilized in forest management planning and help guide the determination of the sustainable harvest area. The program also plays a key role in shaping the models and tools used to forecast the growth and development of Ontario's forests. The core element of this program is an extensive network of permanent sample plots on which the growth and status of individual trees is tracked through time. Data collected from these plots provides information on forest growth and yield as influenced by site, forest structure, silvicultural treatments and natural events.

The program works cooperatively with a wide range of partners who assist in data collection and

analysis. An ongoing partnership with the Forest Ecosystem Science Co-operative, Growth and Yield Business Unit, facilitated the implementation of an extensive field program in 2004-05 throughout the AOU. Collaboration with the Canadian Forest Service, several universities, forest industry, and the Ontario Forest Research Institute, was instrumental in seeing the development of new benchmark yield curves for several common forest species and conditions.

Ontario has a long history of practicing silviculture. Unfortunately, little data existed to develop yield curves for this managed forest condition. In 2004-05, the commitment to collecting long term permanent sample plot data led to the development of initial growth and yield estimates for managed jack pine, black spruce and white spruce plantations. These new yield curves were accepted by the province for use in forest management planning, and had a positive impact on wood supply forecasts. While additional data and modelling are necessary, these initial curves represent a major step forward in our understanding of the impact of silviculture in Ontario on forest growth and yield.

Despite the recognized value of growth and yield data and products, Ontario had no formal mechanism in place for recognizing the role or contribution of the Growth and Yield Program to forest management planning. This deficiency was addressed in 2004-05 in the *revised Forest Management Planning Manual for Ontario's Crown Forests*. The requirement to incorporate growth and yield results into forest management plans is now explicitly acknowledged, and a formal process now exists for developing and documenting growth and yield assumptions for each forest management unit in Ontario.

While progress was made on many fronts, the Growth and Yield Program's accomplishments are often judged by the number of sample plots established or re-measured. By this measure of success, the program experienced its 'best year' since the program's inception. One hundred and ninety two (192) permanent sample plots were re-measured directly by the program, and an additional five (5) plots established across the AOU. Through partnerships, an additional 298 sample plots were established, and 114 plots re-measured. This wealth of data was quickly incorporated into improved yield curves and growth projections for Ontario's forests.

In 2004-05, Ontario participated in a long-term monitoring program with the government of Canada. This project, known as the National Forest Inventory (NFI), involves the establishment of several hundred ground and photo-based monitoring plots, on a systematic grid, throughout Ontario. During this reporting period, the Growth and Yield Program established 88 NFI plots. While this data will contribute to existing modelling initiatives, its primary value will be in providing an independent and unbiased assessment of both the extent and condition of Ontario's forest estate. Several additional years will be required to complete the plot network, and compile the data at a provincial scale.

The Provincial Wood Supply Strategy

The Provincial Wood Supply Strategy for Ontario was published in June 2004 in response to recognition of a long-predicted decline in availability of industrial supply from Ontario's main commercial wood species and the real socio-economic outcomes of this decline; and meeting condition 48 of the Declaration Order Regarding MNR's Class Environmental Assessment Approval for Forest Management on Crown Lands in Ontario (2003).

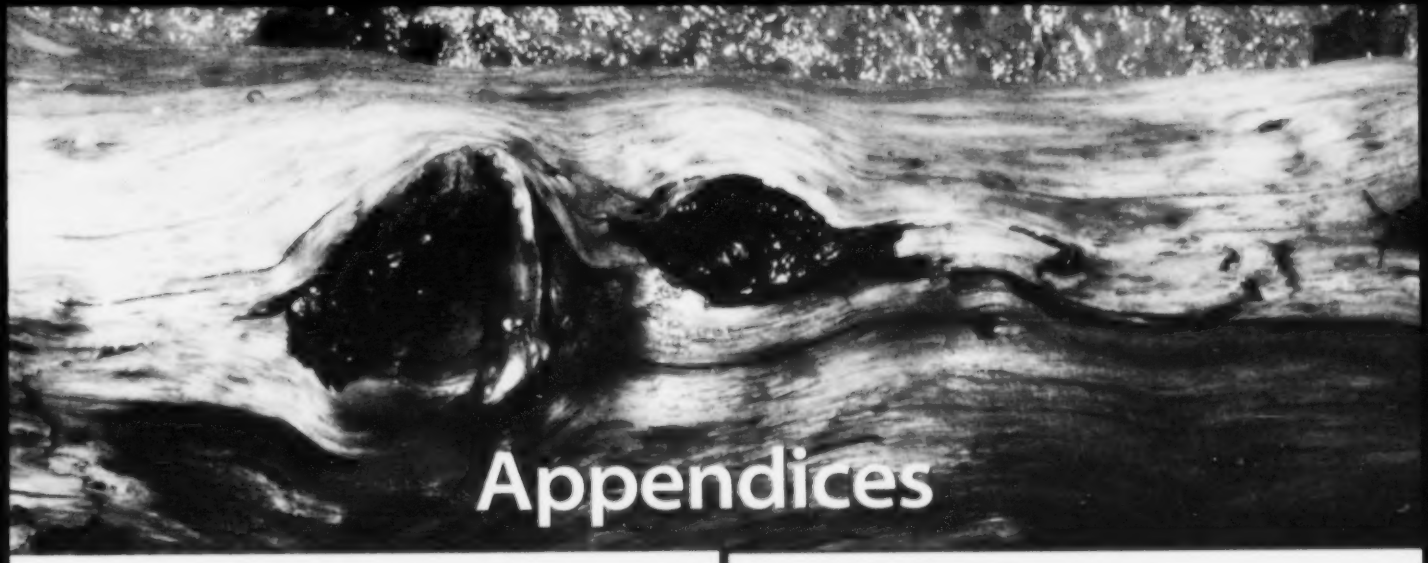
The objective of the Strategy is to sustain and increase the level of long-term wood supply available for industrial use. The Strategy was written by MNR in conjunction with forest industry and non-governmental organizations. The forest industry is a significant partner in the implementation of the Provincial Wood Supply Strategy.

A joint MNR/forest industry team was assembled in 2004 to lead the implementation of the wood supply strategy for Ontario. An implementation plan was developed which describes a series of actions for each of 20 strategies. There was considerable progress made in 2004-05 on most of the strategies included in the Provincial Wood Supply Strategy. Much of this progress is due to work in place as part

of other programs or existing direction, such as meeting EA Declaration Order conditions. Progress included:

- a review of business plans and Ministry Recognized Operating Levels;
- an investigation of new wood supply modelling tools for use in forest management planning;
- significant improvements in yield curves, which were then used in many of the recent FMPs in the Northeast Region. This is expected to provide more accurate wood supply forecasts and some positive wood supply benefits;
- a silvicultural strategy for Ontario, and a review of renewal standards;
- a jointly funded three year research project was initiated to determine the affects of current selection management techniques on product quality and yield;
- the continuation of studies to establish standards for minimizing damage to residual stems and sites, including the use of mechanized harvesting equipment, and,
- the continuation of projects related to successful white pine regeneration.

One of the primary purposes of the Provincial Wood Supply Strategy is to document the state of the available wood supply and the industrial demand and to make this information readily available. The wood supply and demand database is available to the public on the MNR internet website as an appendix to the Provincial Wood Supply Strategy. The database was updated with the most recent data including wood supply forecasts from FMPs approved in 2004 and now contains spreadsheet graphs for Ontario, as well as each region, management unit and species group. This information is documented separately for 2002, 2003 and 2004 based on the applicable FMPs, which were in place during each of those years. The graphs contain historic wood supply and utilization information which dates back to 1990 as a reference.



Appendices

Appendix 1 Key to Management Units (April 1, 2004) (Designated under the Crown Forest Sustainability Act, Section 7)

Appendix 2 Total Provincial Area by Satellite Classifications, 2006

Appendix 3 Forest Management Plans Approved for Implementation in 2004, and Plans Scheduled for Approval and Implementation in 2005, 2006, 2007 and 2008

Appendix 4 Forest-dependent Communities in Ontario (ranked by percentage of forestry workers)

Appendix 5 Forest Renewal Charges for 2003-2004 ($ per cubic metre)

Appendix 6 Acronyms Used in this Report

Appendix 7 Documents Referenced in this Report

A CD of additional background material is included with printed versions of this report. The same information may be downloaded from the MNR website by individuals using digital versions of this report.

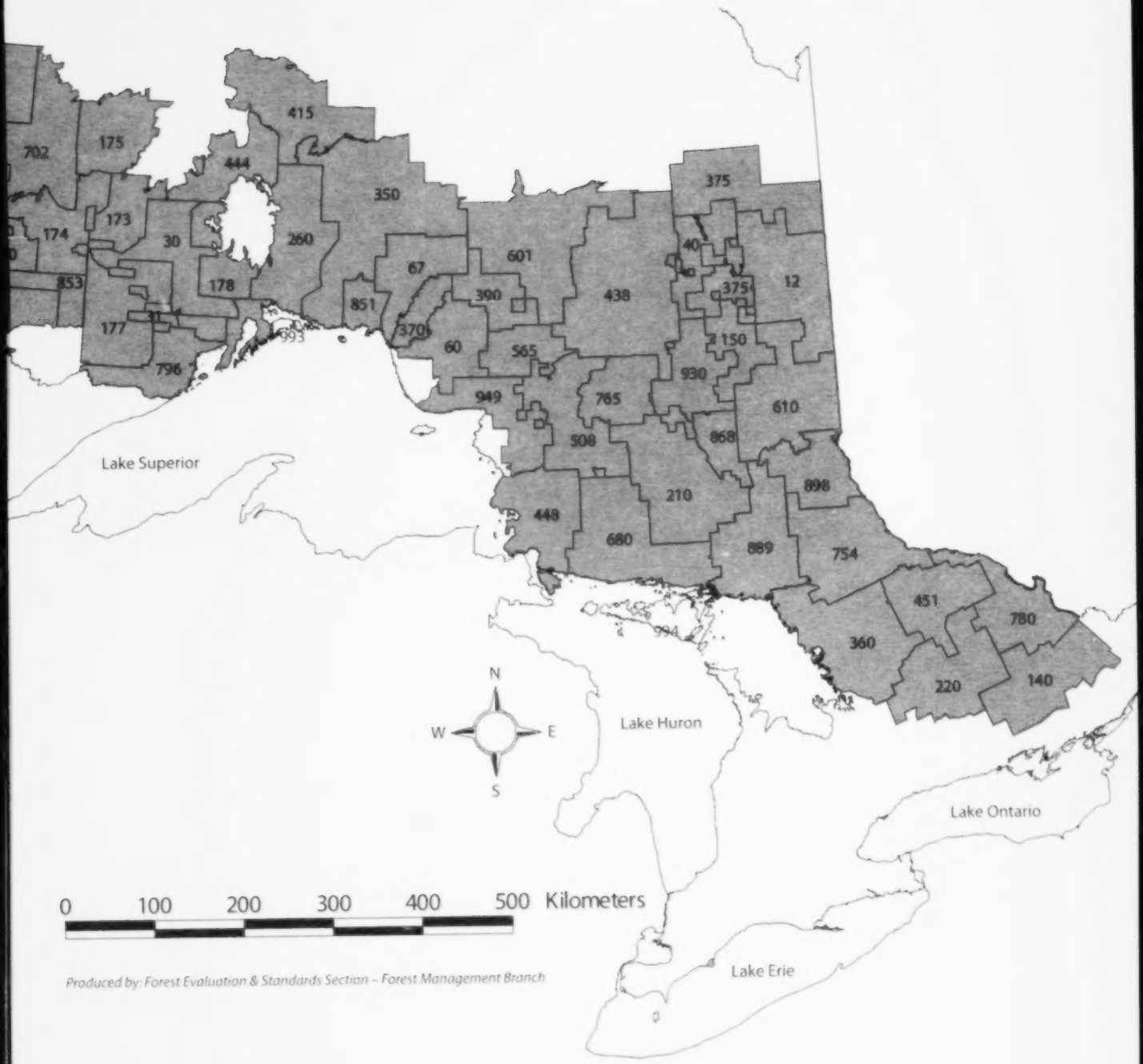
Appendix 1 Key to Management Units (April 1, 2004) (Designated under the Crown Forest Sustainability Act, Section 7)

MNR Region	MU #	Management Unit Name	Status[1]	SFL Holder	Certification Scheme[3]	Certified?
Northwest	444	Armstrong Forest	SFL	Norampac Inc.	SFI	no
	178	Black Sturgeon Forest	SFL	Bowater Canadian Forest Products Inc.	SFI	yes
	175	Caribou Forest	SFL	Bowater Canadian Forest Products Inc.	SFI	yes
	405	Crossroute Forest	SFL	Abitibi-Consolidated Company of Canada	CSA	yes
	177	Dog River-Matawin Forest	SFL	Bowater Canadian Forest Products Inc.	SFI	yes
	535	Dryden Forest	SFL	Dryden Forest Management Company Ltd.	TBD	no
	230	English River Forest	SFL	Bowater Canadian Forest Products Inc.	SFI	yes
	350	Kenogami Forest	SFL	Neenah Paper Company of Canada	SFI	yes
	644	Kenora	SFL	Weyerhaeuser Company Ltd.	CSA	no
	702	Lac Seul Forest	SFL	McKenzie Forest Products Inc.	SFI	no
	260	Lake Nipigon Forest	SFL	Norampac Inc.	SFI	no
	796	Lakehead Forest	SFL	Greenmantle Forest Inc.	SFI	no
	415	Ogoki Forest	SFL	Long Lake Forest Products Inc.	SFI	no
	851	Pic River Ojibway Forest	SFL	Great West Timber Limited	SFI	no
	840	Red Lake Forest	SFL	Red Lake Forest Management Company Ltd.	TBD	no
	853	Sapawe Forest	SFL	Atikokan Forest Products Ltd.	SFI	no
	30	Spruce River Forest	SFL	Abitibi-Consolidated Company of Canada	CSA	yes
	120	Trout Lake Forest	SFL	Weyerhaeuser Company Ltd.	CSA	yes
	130	Wabigoon Forest	SFL	Weyerhaeuser Company Ltd.	CSA	yes
	490	Whiskey Jack Forest	SFL	Abitibi-Consolidated Company of Canada	CSA	yes
Northeast	448	Algoma Forest	SFL	Clergue Forest Management Inc.	FSC	no
	67	Big Pic Forest	SFL	Marathon Pulp Inc.	FSC	no
	370	Black River Forest	SFL	Great West Timber Limited	SFI	no
	375	Cochrane-Moose River	CR			
	438	Gordon Cosens Forest	SFL	Spruce Falls Inc.	FSC	yes
	601	Hearst Forest	SFL	Hearst Forest Management Inc.	TBD	no
	12	Iroquois Falls Forest	SFL	Abitibi-Consolidated Company of Canada	CSA	yes
	565	Magpie Forest	SFL	Dubreuil Forest Products Limited	SFI	no
	390	Nagagami Forest	SFL	Nagagami Forest Management Ltd.	TBD	no
	150	Nighthawk Forest	SFL	Abitibi-Consolidated Company of Canada	CSA	yes
	754	Nipissing Forest	SFL	Nipissing Forest Resource Management Inc.	FSC	yes
	680	Northshore Forest	SFL	Northshore Forest Inc.	FSC	no
	765	Pineland-Martel Forest	SFL	Pineland Timber Company Ltd.	FSC	no
	930	Romeo Malette Forest	SFL	Tembec Industries Inc.	FSC	yes
	868	Shiningtree Forest	SFL	ShiningTree Forest Inc.	TBD	no
	40	Smooth Rock Falls Forest	SFL	Tembec Industries Inc.	FSC	yes
	210	Spanish Forest	SFL	Domtar Inc.	FSC	no
	889	Sudbury Forest	SFL	The Vermillion Forest Management Company Ltd.	FSC	no
	508	Superior Forest	SFL	Tembec Industries Inc.	FSC	no
	898	Temagami	CR			
	610	Timiskaming Forest	SFL	Timiskaming Forest Alliance Inc.	TBD	no
	949	Wawa Forest	SFL	Clergue Forest Management Inc.	FSC	no
	60	White River Forest	SFL	Domtar Inc.	FSC	no
Southern	451	Algonquin Park Forest	AFA	Algonquin Forest Authority	CSA	no
	220	Bancroft-Minden Forest	SFL	Bancroft-Minden Forest Company Inc.	TBD	no
	360	French-Severn Forest	SFL	Westwind Forest Stewardship Inc.	FSC	yes
	140	Mazinaw-Lanark Forest	SFL	Mazinaw-Lanark Forest Inc.	TBD	no
	780	Ottawa Valley Forest	SFL	Ottawa Valley Forest Inc.	TBD	no
	990	Southern Ontario[2]	CR			

[1] Status - Forest Management Planning Re[illegible]bility
SFL - Sustainable Forest Licence
CR - Crown
AFA - Algonquin Forest Authority

[2] Southern Ontario (MU # 990) is south of the AOU.

[3] CSA - Canadian Standards Association
FSC - Forest Stewardship Council
SFI - Sustainable Forestry Initative
TBD - To be determined (not yet identified)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Produced by: Forest Evaluation & Standards Section - Forest Management Branch

Table 1: Key to Management Units (April 1, 2008) (Continued from the Crown Forest Sustainability Act, Section 7)

MNR Region	MU #	Management Unit Name	Status[1]	SFL Holder	Certification Scheme[2]	Certified?
Northwest	444	Armstrong Forest	SFL	Nexampac Inc.		
	438	Black Sturgeon Forest	SFL	Resolute Canadian Forest Products Inc.		
	439	Caribou Forest	SFL	Resolute Canadian Forest Products Inc.		
	405	Crossroute Forest	SFL	Abitibi-Consolidated Company of Canada		
	433	Dog River Matawin Forest	SFL	Resolute Canadian Forest Products Inc.		
	432	Dryden Forest	SFL	Dryden Forest Management Company Ltd.		
	430	English River Forest	SFL	Resolute Canadian Forest Products Inc.		
	450	Kenogami Forest	SFL	Nexfor Paper Company of Canada		
	448	Kenora	SFL	Weyerhaeuser Company Ltd.		
	707	Lac Seul Forest	SFL	McKenzie Forest Products Inc.		
	709	Lake Nipigon Forest	SFL	Nexampac Inc.		
	706	Lakehead Forest	SFL	Greenmantle Forest Inc.		
	811	Ogoki Forest	SFL	Long Lake Forest Products Inc.		
	551	Pic River Highway Forest	SFL	Great West Timber Limited		
	446	Red Lake Forest	SFL	Red Lake Forest Management Company Ltd.		
	810	Sapawe Forest	SFL	Nakina Forest Products Ltd.		
	99	Spruce River Forest	SFL	Abitibi-Consolidated Company of Canada		
	729	Trout Lake Forest	SFL	Weyerhaeuser Company Ltd.		
	434	Wabigoon Forest	SFL	Weyerhaeuser Company Ltd.		
	999	Whitefish Lake Forest	SFL	Abitibi-Consolidated Company of Canada		
Northeast	348	Algoma Forest	SFL	Elergue Forest Management Inc.		
	69	Big Pic Forest	SFL	Marathon Pulp Inc.		
	556	Black Spruce Forest	SFL	Great West Timber Limited		
	475	Cochrane-Moose River	CR			
	434	Conlon Comeau Forest	SFL	Spruce Falls Inc.		
	601	Heanet Forest	SFL	Heanet Forest Management Inc.		
	12	Iroquois Falls Forest	SFL	Abitibi-Consolidated Company of Canada		
	96	Magpie Forest	SFL	Dubreuil Forest Products Limited		
	990	Nagagami Forest	SFL	Nagagami Forest Management Ltd.		
	150	Nighthawk Forest	SFL	Abitibi-Consolidated Company of Canada		
	754	Nipissing Forest	SFL	Nipissing Forest Resource Management Inc.		
	680	Northshore Forest	SFL	Northshore Forest Inc.		
	767	Pineland Martel Forest	SFL	Pineland Timber Company Ltd.		
	493	Remo Mobile Forest	SFL	Tembec Industries Inc.		
	868	Shining Tree Forest	SFL	ShiningTree Forest Inc.		
	40	Smooth Rock Falls Forest	SFL	Tembec Industries Inc.		
	2101	Spanish Forest	SFL	Domtar Inc.		
	888	Sudbury Forest	SFL	The Vermilion Forest Management Company Ltd.		
	606	Superior Forest	SFL	Tembec Industries Inc.		
	830	Temagami	CR			
	830	Timiskaming Forest	SFL	Timiskaming Forest Alliance Inc.		
	458	Wawa Forest	SFL	Elergue Forest Management Inc.		
	04	White River Forest	SFL	Domtar Inc.		
Southern	831	Algonquin Park Forest	AFA	Algonquin Forest Authority		
	720	Bancroft-Minden Forest	SFL	Bancroft-Minden Forest Company Inc.		
	843	Lonely Severn Forest	SFL	Weyerhaeuser Forest Stewardship Inc.		
	840	Mazinaw Lanark Forest	SFL	Mazinaw-Lanark Forest Inc.		
	580	Ottawa Valley Forest	SFL	Ottawa Valley Forest Inc.		
	983	Southern Ontario	CR			

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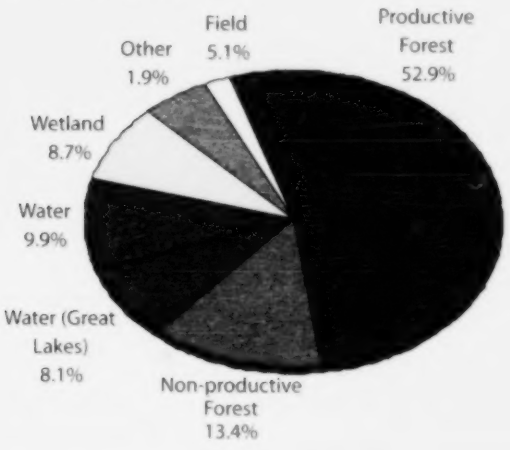
Appendix 2 Total Provincial Area by Satellite Classifications, 2006[1]

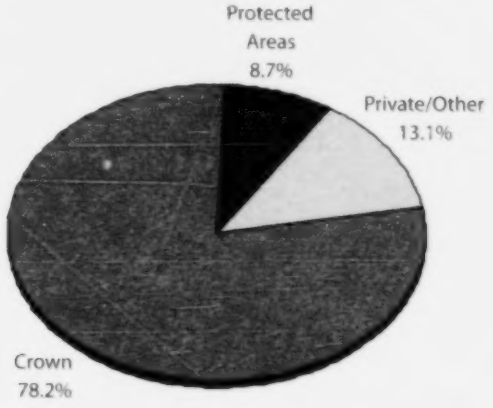
Area in thousands of hectares

	Total Provincial Area				Area of the Undertaking (AOU)			
		Protected				Protected		
Land Class	Crown	Areas	Other	Total	Crown	Areas	Other	Total
Non-forested Land/Water								
Water (Great Lakes)	8,517.3	169.8	0.0	8,687.1	0.0	0.0	0.0	0.0
Water	9,118.0	1,559.2	0.0	10,677.2	4,833.1	883.9	0.0	5,716.9
Wetland	8,175.7	1,065.6	130.9	9,372.2	271.0	60.7	34.0	365.7
Rock	258.6	105.0	183.3	546.8	103.9	58.3	115.1	277.3
Field/Agriculture	27.5	5.6	5,501.3	5,534.4	16.1	0.8	571.1	587.9
UCL	56.5	2.8	536.7	596.0	41.9	2.0	148.2	192.1
Other	480.0	337.2	93.6	910.8	111.7	31.5	36.6	179.9
Subtotal:	26,633.6	3,245.4	6,445.7	36,324.6	5,377.7	1,037.2	905.0	7,319.8
Non-productive Forest								
Swamp	1.2	1.8	118.4	121.4	0.0	0.3	19.5	19.9
Treed Bog & Fen	12,757.0	1,114.3	391.8	14,263.1	1,337.2	167.3	170.8	1,675.2
Subtotal:	12,758.2	1,116.1	510.2	14,384.5	1,337.2	167.6	190.3	1,695.1
Productive Forest								
Dense Deciduous	3,235.0	524.9	1,912.1	5,672.0	2,942.7	295.6	1,174.8	4,413.1
Dense Conifer	13,513.7	1,426.7	1,069.8	16,010.1	7,702.8	949.4	740.1	9,392.3
Mixed Forest	11,617.5	1,534.6	2,657.1	15,809.2	9,463.0	1,011.3	1,940.7	12,415.0
Sparse Forest	11,350.6	1,109.9	1,206.3	13,666.7	4,517.6	587.7	913.5	6,018.7
Disturbance - Harvest	2,042.1	32.9	189.9	2,264.9	2,040.8	32.1	162.5	2,235.5
Disturbance - Fire	1,893.8	236.7	42.2	2,172.7	207.1	74.0	4.7	285.9
Regenerating Forest	1,097.4	99.1	52.9	1,249.4	23.2	5.6	4.2	33.0
Subtotal:	44,750.0	4,964.8	7,130.2	56,845.0	26,897.3	2,955.7	4,940.5	34,793.5
All Forest:	57,508.2	6,081.0	7,640.4	71,229.5	28,234.5	3,123.3	5,130.8	36,488.6
Grand Total:	84,141.7	9,326.3	14,086.1	107,554.2	33,612.2	4,160.5	6,035.8	43,808.4

[1] The information reported in this appendix is updated on a 5 year cycle.

Total Provincial Area





Appendix 3 Forest Management Plans Approved for Implementation in 2004, and Plans Scheduled for Approval and Implementation in 2005, 2006, 2007 and 2008

Plans Approved for Implementation in 2004

Management Unit Name (current or proposed)	MU#	District	Remarks
English River Forest	230	Dryden	English River Forest (174) and Brightsand Forest (173) to be amalgamated April 1, 2004
French-Severn Forest	360	Parry Sound	
Magpie Forest	565	Wawa	
Nipissing Forest	754	North Bay	
Temagami	898	North Bay	
Trout Lake Forest	120	Red Lake	
Whiskey Jack Forest	490	Kenora	

Plans Scheduled for Approval and Implementation in 2005

Management Unit Name (current or proposed)	MU#	District	Remarks
Algoma Forest	448/949	Sault Ste. Marie	Algoma Forest (448) and Wawa Forest (949) to be amalgamated April 1, 2005
Algonquin Park Forest	451	Algonquin Park	
Armstrong Forest	444	Thunder Bay	
Dog River-Matawin Forest	177	Thunder Bay	
Gordon Cosens Forest	438	Hearst	
Iroquois Falls Forest	12	Cochrane	
Kenogami Forest	350	Nipigon	
Northshore Forest	680	Sault Ste. Marie	
Sapawe Forest	853	Fort Frances	
Smooth Rock Falls Forest	40	Cochrane	
Spanish Forest	210	Sudbury	
Sudbury Forest	889	Sudbury	

Plans Scheduled for Approval and Implementation in 2006

Management Unit Name (current or proposed)	MU#	District	Invitation to Participate - Tentative Date
Bancroft-Minden Forest	220	Bancroft	Feb-04
Black River Forest	370	Wawa	Feb-04
Black Sturgeon Forest	178	Nipigon	Feb-04
Dryden Forest	535	Dryden	Feb-04
Kenora Forest	644	Kenora	Feb-04
Lac Seul Forest	702	Sioux Lookout	Feb-04
Lake Nipigon Forest	260	Nipigon	Feb-04
Mazinaw-Lanark Forest	140	Bancroft	Feb-04
Nagagami Forest	390	Wawa	Feb-04
Ottawa Valley Forest	780	Pembroke	Feb-04
Pic River Ojibway Forest	851	Nipigon	Feb-04
Pineland-Martel Forest	765	Chapleau	Feb-04
Spruce River Forest	30	Thunder Bay	Feb-04
Superior Forest	508	Chapleau	Feb-04
Timiskaming Forest	610	Kirkland Lake	Feb-04

Note: Timiskaming Forest (610) and Shiningtree Forest (868) to be amalgamated in 2006.

Plans Commencing Preparation in 2005 for Approval and Implementation in 2007

Management Unit Name (current or proposed)	MU#	District	Invitation to Participate - Tentative Date
Big Pic Forest	67	Wawa	Feb-05
Caribou Forest	175	Sioux Lookout	Feb-05
Crossroute Forest	405	Fort Frances	February 2005 - 'Highrock Forest (290) and Fort Frances-Flanders Forest (827) amalgamated April 1, 2002
Hearst Forest	601	Hearst	Feb-05
Lakehead Forest	796	Thunder Bay	Feb-05
Romeo Malette Forest	930	Timmins	Feb-05

Plans Commencing Preparation in 2006 for Approval and Implementation in 2008

Management Unit Name (current or proposed)	MU#	District	Remarks
Cochrane-Moose River	375	Cochrane	Cochrane (520) and Moose River (738) amalgamated April 1, 2003
Nighthawk Forest	150	Timmins	Driftwood Forest (410), Timmins Forest (400) and Timmins (900) amalgamated April 1, 2003
Ogoki Forest	415	Nipigon	Nakina North Forest (240) and Ogoki Forest (241) amalgamated April 1, 2003
Red Lake Forest	840	Red Lake	
Wabigoon Forest	130	Dryden	
White River Forest	60	Wawa	

Appendix 4 - Forest-dependent Communities in Ontario (ranked by percentage of forestry workers)

Census Subdivision	Subdivision Type	2001[1] Population	Labour Force	Forestry Workers	Percent Forestry
Dubreuilville	Township	967	620	375	60.5%
James	Township	467	235	120	51.1%
Terrace Bay	Township	1,950	1,035	475	45.9%
White River	Township	993	555	250	45.1%
Red Rock	Township	1,233	560	230	41.1%
Dorion	Township	442	220	80	36.4%
Nipigon	Township	1,964	1,010	365	36.1%
Aroland 83	Reserve	346	120	40	33.3%
Smooth Rock Falls	Town	1,830	910	290	31.9%
Ear Falls	Township	1,150	635	180	28.4%
Greenstone	Town	5,662	3,020	805	26.7%
Opasatika	Township	325	135	35	25.9%
Brudenell, Lyndoch and Raglan	Township	1,565	650	155	23.9%
Atikokan	Township	3,632	1,790	425	23.7%
Hearst	Town	5,825	3,260	770	23.6%
Dryden	City	8,198	4,390	1,000	22.8%
Chapleau	Township	2,832	1,455	330	22.7%
Espanola	Town	5,449	2,575	575	22.3%
Rainy River, Unorganized	Unorganized	1,605	865	185	21.4%
Mattice-Val Cote	Township	891	380	80	21.1%
Conmee	Township	748	435	90	20.7%
Val Rita-Harty	Township	1,022	485	100	20.6%
Fauquier-Strickland	Township	678	245	50	20.4%
Chapple	Township	910	515	105	20.4%
Baldwin	Township	624	295	60	20.3%
Matachewan	Township	308	100	20	20.0%
Charlton	Town	276	100	20	20.0%
Gillies	Township	522	200	40	20.0%

Note: Forestry Workers is an aggregate of the following NAIC 4 digit classifications:

Code	Description
1131	Timber tract operations
1132	Forest nurseries and gathering of forest products
1133	Logging
1153	Support activities for forestry
3211	Sawmills and wood preservation
3212	Veneer, plywood and engineered wood product manufacturing
3219	Other wood product manufacturing
3221	Pulp, paper and paperboard mills
3222	Converted paper product manufacturing

Source: Statistics Canada 2001 Census of Population

Appendix 5 – Forest Renewal Charges for 2004-05 ($ per cubic metre)

MNR Region	Management Unit	Rates Charged by Tree Species or Groups of Species: White & Red Pine Grade 1	White & Red Pine Grade 2	Hemlock & Cedar	Other Conifer	Poplar & White Birch	Hardwood Grade 1	Hardwood Grade 2
Northwest	Armstrong Forest	$11.00	$11.00	$2.00	$3.00	$0.50	$8.00	$1.50
	Black Sturgen Forest	$11.00	$11.00	$6.00	$7.00	$0.75	$8.00	$1.50
	Caribou Forest	$11.00	$11.00	$5.00	$5.00	$0.75	$8.00	$1.50
	Crossroute Forest	$11.00	$11.00	$0.00	$5.20	$0.50	$8.00	$0.50
	Dog River - Matawin Forest	$11.00	$11.00	$7.00	$7.00	$0.75	$8.00	$1.50
	Dryden Forest	$6.00	$6.00	$6.00	$6.00	$2.00	$1.50	$1.50
	English River Forest	$11.00	$11.00	$6.00	$6.00	$0.75	$8.00	$1.50
	Kenogami Forest	$11.00	$11.00	$6.25	$6.25	$1.00	$1.00	$1.00
	Kenora Forest	$5.00	$5.00	$3.00	$3.00	$0.50	$8.00	$1.50
	Lac Seul Forest	$11.00	$11.00	$3.00	$3.00	$0.50	$8.00	$1.50
	Lake Nipigon Forest	$3.00	$3.00	$3.00	$3.00	$0.50	$8.00	$1.50
	Lakehead Forest	$4.00	$4.00	$0.00	$4.00	$0.50	$0.50	$0.50
	Ogoki Forest	$11.00	$11.00	$6.00	$2.00	$0.50	$8.00	$1.50
	Pic River Ojibway Forest	$11.00	$11.00	$2.00	$2.00	$0.50	$8.00	$1.50
	Red Lake Forest	$1.00	$1.00	$1.00	$4.50	$0.75	$8.00	$1.50
	Sapawe Forest	$6.00	$6.00	$2.00	$5.00	$0.50	$8.00	$1.50
	Spruce River Forest	$6.00	$6.00	$6.00	$6.00	$1.00	$1.00	$1.00
	Trout Lake Forest	$11.00	$11.00	$2.80	$2.80	$1.00	$8.00	$1.50
	Wabigoon Forest	$11.00	$11.00	$3.50	$3.50	$1.00	$1.00	$1.00
	Whiskey Jack Forest	$11.00	$11.00	$5.00	$6.00	$1.00	$8.00	$1.50
Northeast	Algoma Forest	$8.00	$8.00	$1.00	$5.20	$0.50	$6.25	$1.00
	Big Pic Forest	$11.00	$11.00	$6.00	$6.00	$0.50	$8.00	$1.50
	Black River Forest	$11.00	$11.00	$6.00	$6.00	$0.50	$8.00	$1.50
	Cochrane - Moose River Forest	$11.00	$11.00	$5.50	$0.00	$0.00	$8.00	$1.50
	Gordon Cosens Forest	$11.00	$11.00	$1.00	$5.32	$0.80	$8.00	$1.50
	Hearst Forest	$11.00	$11.00	$1.00	$4.75	$0.60	$8.00	$1.50
	Iroquois Falls Forest	$11.00	$11.00	$2.00	$6.00	$0.76	$8.00	$1.50
	Magpie Forest	$11.00	$11.00	$2.00	$2.00	$0.50	$8.00	$1.50
	Nagagami Forest	$11.00	$11.00	$6.41	$6.00	$0.75	$8.00	$1.50
	Nighthawk Forest							
	Apr. 1, 2004 to May 31, 2004	$4.00	$4.00	$4.00	$4.00	$0.50	$0.50	$0.50
	Jun. 1, 2004 to Mar. 31, 2005	$2.00	$2.00	$2.00	$2.00	$0.50	$0.50	$0.50
	Nipissing Forest	$11.00	$6.00	$0.50	$6.00	$0.50	$8.00	$1.50
	Northshore Forest	$4.53	$4.53	$1.00	$2.50	$0.50	$5.00	$0.50
	Pineland - Martel Forest	$11.00	$11.00	$0.60	$4.20	$0.60	$8.00	$1.50
	Romeo Malette Forest	$6.00	$6.00	$4.30	$4.30	$0.55	$8.00	$1.50
	Shiningtree Forest	$7.70	$7.70	$4.20	$4.20	$0.35	$5.60	$1.05
	Smooth Rock Falls Forest	$11.00	$11.00	$0.00	$0.00	$0.00	$8.00	$1.50
	Spanish Forest	$10.00	$10.00	$1.00	$4.00	$0.50	$8.00	$1.50
	Sudbury Forest	$11.00	$6.00	$0.50	$6.00	$0.50	$8.00	$1.50
	Superior Forest	$11.00	$11.00	$1.00	$5.10	$0.50	$8.00	$1.50
	Temagami	$11.00	$11.00	$6.00	$5.67	$0.50	$8.00	$1.50
	Timiskaming Forest	$11.00	$11.00	$4.80	$4.80	$0.40	$8.00	$1.50
	Wawa Forest	$8.00	$8.00	$1.00	$5.20	$0.50	$6.25	$1.50
	White River Forest	$11.00	$11.00	$1.00	$1.00	$0.50	$8.00	$1.50
Southern	Algonquin Park Forest	$4.75	$4.75	$0.10	$0.10	$0.10	$4.75	$0.10
	Bancroft - Minden Forest	$11.50	$0.25	$1.00	$2.00	$0.50	$8.00	$0.25
	French - Severn Forest							
	Apr. 1, 2004 - May 31, 2004	$11.00	$1.50	$2.00	$6.00	$0.50	$8.00	$0.50
	Jun. 1, 2004 - Mar. 31, 2005	$11.00	$1.50	$2.00	$6.00	$2.00	$8.00	$1.00
	Mazinaw - Lanark Forest	$10.00	$0.25	$0.25	$0.25	$0.50	$5.00	$0.25
	Ottawa Valley Forest	$11.00	$1.50	$1.50	$6.00	$0.50	$8.00	$1.50
	Southern Ontario	$12.50	$1.50	$6.00	$6.00	$1.50	$8.00	$1.50

Appendix 6 Acronyms Used in this Report

AFA	Algonquin Forestry Authority
AOU	Area of the Undertaking
ANSI	Area of Natural and Scientific Interest
BFOLDS	Boreal Forest Landscape Dynamics Simulator
B.t.	Bacillus thuringiensis
CFS	Canadian Forest Service (a section of Natural Resources Canada)
CFSA	Crown Forest Sustainability Act
EA	Environmental Assessment
ELC	Ecological Land Classification
FIM	Forest Information Manual
FMP	Forest Management Plan
FMPM	*Forest Management Planning Manual for Ontario's Crown Forests*
FOCIS	Forest Operations Compliance Information System
FRI	Forest Resources Inventory
FRL	Forest Resource Licence
FTG	Free-To-Grow
GIS	Geographic Information System
IFM	Intensive Forest Management
LCC	Local Citizens Committee
MFTIP	Managed Forest Tax Incentive Program
MNR	Ministry of Natural Resources (Ontario)
MOE	Ministry of Environment (Ontario)
MOU	Memorandum of Understanding
NCC	Nature Conservancy of Canada
NDPE Guide	*Forest Management Guide for Natural Disturbance Pattern Emulation*
NRCAN	Natural Resources Canada
NWOA	Norfolk Woodlot Owners Association
OLL	Ontario's Living Legacy
PGP	Permanent Growth Plot
PSP	Permanent Sample Plot
Room to Grow	*Room to Grow: Final Report of the Ontario Forest Accord Advisory Board on Implementation of the Accord*
RSA	Resource Stewardship Agreement
SEIM	Socio-Economic Impact Model
SFL	Sustainable Forest Licence
SFMM	Strategic Forest Management Model
STARS	Silviculture Treatment, Assessment and Reporting System
Timber Class EA approval	*Reasons For Decision And Decision, Class Environmental Assessment by the Ministry of Natural Resources for Timber Management on Crown Lands in Ontario*
T&C	Term and Condition (of the Timber Class EA approval)

Appendix 7 Documents Referenced in this Report

Most of the Ministry of Natural Resources publications referred to below are available online at: http://ontariosforests.mnr.gov.on.ca/spectrasites/internet/ontarioforests/publications.cfm

Most of the Provincial Acts referred to below are available online at: http://www.e-laws.gov.on.ca/

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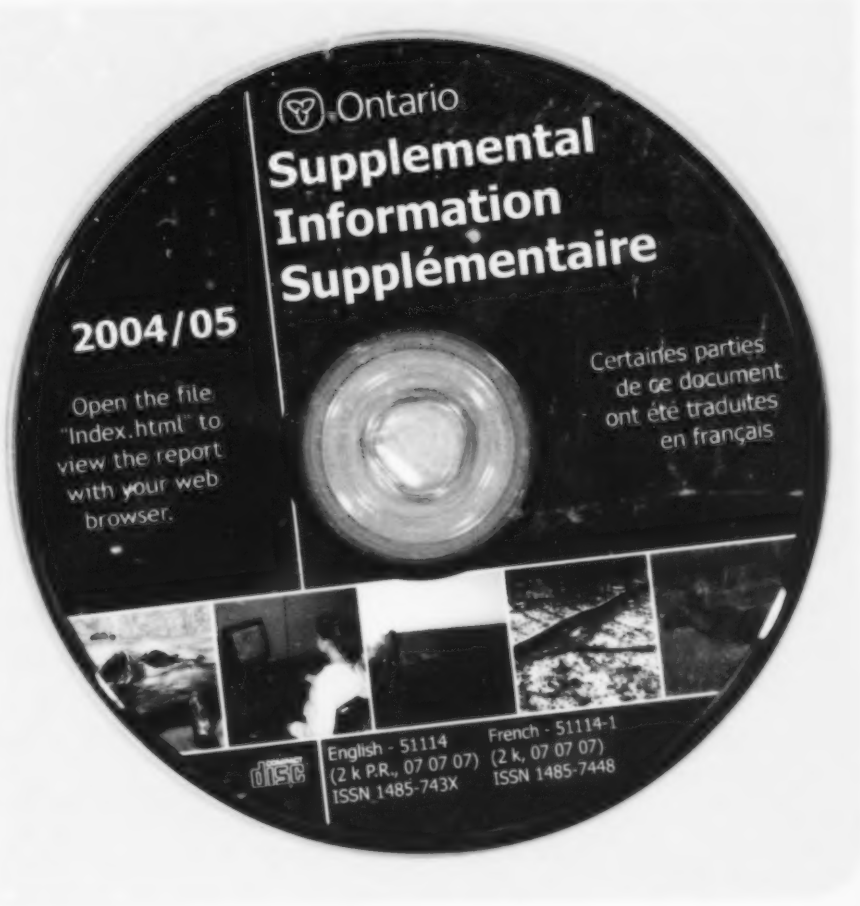
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- Provincial Annual Report Archives
  This section contains full text versions of annual reports from 2000/01 to 2003/04.
- Independent Forest Audit Reports
  This section contains the full text of the independent forest audits that were conducted during the 2004/05 fiscal year.
- Forest Science
  On these pages, users will find the ARDB annual report, which summarizes research activities that took place during 2004/05. The section also contains a bibliography of recent science publications.
- Mill Statistics
  This section describes Ontario's Forest Industry and the products that are manufactured in the province.
- Overview of Ontario's Forests
  This section contains a full text version of the Forest Resources of Ontario report. This document provides detailed statistics, maps and analysis of the timber resources of the province.
- State of the Forest Report 2001
  This section contains both the full text and summary text of the 2001 SOFR. This document provides a detailed examination of criteria and indicators of sustainable forest management in Ontario.
- PDF Maps
  This section provides some of the more commonly requested maps and statistics.
- Forest Image Gallery and Virtual Forest Panoramas
  This section contains photographs of many forest management operations. You may use these photographs in presentations or documents.
- Demographic Profiles
  This section contains details, by geographic area, of socio-economic information. The information originates from the Statistics Canada 2001 census.